

SAFETY MANUAL/PROGRAM

FOR

MERIT ELECTRIC COMPANY, LTD.

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POLICY STATEMENT

MERIT ELECTRIC COMPANY, LTD.

“SAFETY FIRST TODAY AND ALWAYS”

With this pledge, the management of Merit Electric Company affirms the following policy.

Merit Electric Company is committed to providing its employees with a safe working environment by adhering to rigorous safety policies which reduce the hazards associated with industrial settings. Safe working conditions are to be provided through employee education and training. Training that starts prior to work assignments and continues as an integral element of each assignment.

With communication of safe procedures and their use in our day to day operations, we will do everything within reason to improve our safety efforts. All our employees will be expected to demonstrate an attitude that reflects this policy. Employees reporting unsafe conditions will be commended for their safety awareness. At Merit Electric Company safety is everyone's responsibility.

Larry B. Wiggins
Chairman/ CEO

MANAGEMENT STATEMENT

This manual is a guide for supervisors and foreman in the implementation of the Merit Electric Safety Program. It describes the responsibilities and functions of each with regards to safe working conditions.

It is in the Company policy that the control of accidents be made an integral part of the way we do business.

Supervisors at all levels are expected to enforce an effective Accident Control Program within the area of their responsibility using this safety manual as a guideline for an effective accident control effort.

Compliance with existing laws and codes is of the utmost importance.

All supervisors should have a clear understanding of the accident control philosophy and develop knowledge of the basic principles of accident prevention. They should be familiar with the Occupational Safety and Health Act as it pertains to their specific duties.

Merit Electric Management is sincerely interested in the wellbeing of our employees. As such, you are encouraged to review these policies and procedures in relation to our Safety Program. If you have any questions please direct your inquiries to your immediate supervisor for clarification.

Merit Electric takes pride in the fact that our safety program is carried out in the most effective and efficient manner.

EMERGENCY ACTION PLAN/INJURY HANDLING

MERIT ELECTRIC COMPANY, LTD

1. a first aid kit which meets z 308.1-1978 standards is required on all jobsites and in all service vehicles. These may be provided by the client or merit electric.

EMERGENCY ACTION PLAN Medical Emergencies/Injuries

Know the location of safety equipment (eye wash stations/bottles, emergency showers, first aid kits) in your area, and how to use them—where applicable.

Adhere to the “Check, Call, Care” regimen regarding injuries, as follows.

Check—if an employee is injured, unconscious, or otherwise exhibiting signs/symptoms of an injury that requires immediate medical attention.

Check the scene to ensure the environment poses no additional risk to the injured person or yourself.

When the environment poses an immediate and additional threat to the injured person (For example a building fire).

Do not move them from the scene.

Quickly obtain information relative to the nature and extent of the injury for communication purposes.

DO NOT initiate medical care at this time, unless someone assisting you is able to proceed with the following instructions.

Call—once you have assessed the scene and injured person, promptly call foreman, office, journeyman to report the medical condition.

Be sure to convey information relative to the nature and extent of the injury, including whether additional individuals are at risk of further injury.

Provide or arrange transportation to the nearest medical facility.

Foreman must notify the office as promptly as possible

IN CASE OF EMINENT DANGER OR SERIOUS INJURY CALL 911

Care—once you have assessed the scene and notified the appropriate personnel, proceed with 1st aid.

If you are capable of administering proper care.

DO NOT administer 1st aid to an injured person if you are unqualified, as you may place him/her in greater harm.

CPR should be continuously administered until medical personnel arrive.

Foreman, journeyman or competent person will themselves administer 1st aid/CPR;

Call external responders/ambulatory services to respond and transport injured persons to the appropriate facility

1. Once the employee is no longer in danger and has been/is being treated, fill out the employers' first report of injury or illness (form on last page of this tab) and fax to the main office in Houston @ 713-290-0514 for the safety director to handle accordingly.
2. After foreman has returned to the jobsite an incident/accident investigation report shall be filled out and forwarded to the safety director.

WHENEVER AN EMPLOYEE IS SERIOUSLY INJURED AND MUST BE HOSPITALIZED OR HAS SUFFERED ACCIDENTAL DEATH...THE SUPERVISOR MUST IMMEDIATELY NOTIFY THE MAIN OFFICE. FATAL INJURIES AND ALL INCIDENTS HOSPITALIZING 3 OR MORE EMPLOYEES MUST BE REPORTED TO OSHA WITHIN 8 HOURS BY SPEAKING TO A LIVE REPRESENTATIVE @ 1-800-321-OSHA.

EVACUATION

Everyone shall be instructed in the following before beginning work at any site.

- b. Recognition of the alarm system used at their job site.
- c. The evacuation plan and its primary and secondary routes.

- a. The primary and secondary assembly points.
- b. Knowledge of who the supervisor or acting contact person(s) is.
- c. Procedures for reporting potential or existing emergencies.
- d. Specific response duties for employees with specialized training.
- e. Types of possible emergencies.
- f. Knowledge of location of emergency phone numbers.
- g. How to identify signs of hazards effecting evacuation.

If the emergency results in a building evacuation.

Following emergency evacuations, your designated place of shelter is the primary assembly point, or alternate

If the emergency is impacting your primary location. Proceed to your SECOND assembly point at once.

Foreman, supervisor. Keep streets, fire lanes, hydrants and walkways clear for emergency vehicles and crews.

IMPORTANT—DO NOT RETURN TO AN EVACUATED BUILDING until and unless told to do so by your foreman. And remember—during an actual emergency resulting in a building evacuation,

HEADCOUNTS are to be performed at the assembly point(s), Stay there until. Accurate **HEADCOUNT** has been taken.

CHEMICAL HAZARDS

1. If an employee is working with a chemical he or she should have access to the (msds)
2. If an employee is exposed to a hazardous chemical, refer to the msds for that chemical. The emergency procedures for chemical exposure should be known before working with a chemical.
3. If there is a flammable liquid spill, all ignition sources shall be shut down and the work area must be evacuated until the spill has been cleaned up and the area has been cleared by a competent person.
4. If someone becomes unconscious; a CPR certified person shall administer CPR and first aid while another employee dials 911. CPR should be continuously administered until medical personnel arrive. There will always be at least one CPR qualified person on all jobsites.
5. If an accident requires more than first aid and the person is not unconscious, provide or obtain transportation to the nearest medical facility and promptly notify the main office.
6. Once the employee is no longer in danger and has been/is being treated, fill out the employer's first report of injury or illness (form on last page of this tab) and fax to the main office in Houston @ 713-290-0514 for the safety director to handle accordingly.

THE E-1 (EMPLOYERS FIRST REPORT OF INJURY OR ILLNESS) IS ON THE NEXT PAGE.

SAFETY RESPONSIBILITIES

MERIT ELECTRIC COMPANY, LTD

The company recognizes the need for defining the responsibilities of its employees with regard to safety and health. The following list will serve as a guideline for job positions and their descriptions with regard to safety:

A. executive management

- a. Establishment of company policy.
- b. Provide leadership.
- c. Appoint executive safety position.
- d. Support safety rules and regulations.
- e. delegate authority to others to implement safety procedures and programs

B. safety director

- a. Develop and implement merit electric's safety policies, procedures, training and programs.
- b. Inspect and walk jobsites frequently.
- c. Inform management and employees of unsafe work environments.
- d. Coordinate company safety program with client safety personnel.
- e. Support safety for onsite operations.
- f. Supervise completion and maintenance of all federal, state, local and client requirements for reports, recordkeeping and statistics.

C. supervisors/foreman's

- a. Ensure that all applicable standards, regulations, ordinances, and client policies are complied with.

- b. Accept responsibility for the compliance of the company programs and policies as it impacts their duties and the employees under their supervision.
- c. Provide employees with necessary materials, training (based on need), evaluations, recommendations, discipline, and guidance to provide for a positive attitude for safety awareness in each employee.
- d. Inform management of any safety concerns and needs.
- e. assist in the preparations of all audits, investigations and programs
- f. Inspect for compliance with safe work practices and safety rules.

D. employees

- a. Must comply with all company, state, federal, local, and client safety regulations as they apply to each and every employee.
- b. Be expected to review the company safety program and follow all safety rules.
- c. Refrain from engaging in horseplay or other activities which could cause injury to themselves or others.
- d. Request and use personal protective equipment as needed for specific tasks.
- e. Report all injuries, accidents, and near accidents to your immediate supervisor as soon as possible (after the threat of immediate danger to yourself and others has passed).
- f. Attend and take an active part in safety meetings.
- g. Use good safety practices when working.
- h. Do not take shortcuts from safe work practices.

- i. Do not start any work which is believed unsafe without reviewing the conditions with the supervisor in charge.

DISCIPLINARY POLICY

MERIT ELECTRIC COMPANY, LTD

Merit electric company personnel will adhere to company and client safety rules and regulations as a condition of employment. Any individual employee that has shown continued disregard for either safety or attendance standards shall be subject to appropriate disciplinary action. Such disciplinary action may be up to and including termination of employment. Such termination of employment shall be deemed to be “for cause” and will disqualify the employee from any job incentives the management may enact or award.

We have no desire to discipline any employee. However, we intend to use every means to ensure a safe workplace, and you are expected to fulfill your responsibility in meeting this goal.

Effective immediately, the following will be used throughout this corporation. The procedure will apply equally to all employees, regardless of position or job assignment, and no exceptions to the policy will be made.

Violation notification will consist of three types: verbal, written and termination. In most cases, a verbal warning will be given prior to issuing a safety violation notice, unless the offense is an immediate danger to life or health. Safety violation notices will be issued and kept on file. Four written warnings will result in termination of the employee. Termination may also result from a willful and/or negligent act or acts resulting in personal injury or damage to property.

All violations will be recorded on the safety violation form (attachment on last page of this tab) and maintained by the safety director and at the job site.

All violation notices will be kept in the employees file for a period of one year at which time it shall be removed from the employee’s record.

ADHERENCE TO POLICY

In order for any disciplinary program to work effectively, it must be administered fairly and consistently to all employees. Therefore, this procedure allows for no exceptions. The procedure will be the same for all employees.

MINIMUM SAFETY RULES FOR EMPLOYEES OF

MERIT ELECTRIC COMPANY, LTD

All employees have a safety responsibility to themselves and to their fellow workers. Everyone is expected to take an active part in and support our safety program. These safety rules apply to all employees, tools (including personal tools) and equipment on all jobs. Special additional rules may be established by the general contractor, field superintendent or foreman and in no way describe all standards set by OSHA. This section is designed to be a quick reference for day to day activities.

1. Report unsafe conditions or unsafe acts to your foreman for correction. If for any reason you don't feel comfortable reporting to the foreman, inform the safety director of the situation.
2. Report all injuries, regardless of how slight, to your foreman. The foreman must be notified before any employee sees a doctor concerning a job related injury except in an extreme emergency.
3. Horseplay on the job is strictly prohibited.
4. Hard hats must be worn by everyone on all job sites at all times (this does not include service calls in an occupied lease space).
5. fall protection is required when working at an elevation of 6 feet or more off the ground or when on scaffolding where the next lowest platform or level to land/fall onto is 10 feet or more
6. Safety shoes are encouraged. Sturdy, heavy-duty work shoes are required. Canvas and loafer type shoes are not permitted.
7. Work gloves must be worn when handling rough edges or abrasive material when the work subjects hands to lacerations, punctures or burns. Rubber gloves must be worn when handling any chemical that is harmful to the skin (refer to msds).
8. Proper precautions must be taken when using items such as PVC glue, paint or any other product that has harmful vapors (refer to msds).
9. Safety glasses with side shield (minimum standard for safety glasses) must be worn at all times on all job sites. Goggles shall be worn while drilling overhead or

when using powder actuated tools. Face shields shall be worn when using a grinder.

10. No one will use powder actuated tools unless licensed to do so.
11. Hearing protection in the form of ear muffs or approved ear plugs must be worn on all high-noise level jobs as directed. Cotton or waste will not be used as ear plugs.
12. When working on any equipment or circuits, they must be de-energized and proper lockout tag out procedures must be followed (refer to lockout /tag out program). If equipment or circuits must be worked on while energized, proper protective equipment specific to the job task must be worn.
13. Employees working around moving equipment are required to wear reflective clothing. Employees are also cautioned about the danger of loose clothing, rings, bracelets and jewelry around moving equipment. Shirts shall be worn by all employees at all times (no sleeveless shirts).
14. Use of gasoline is prohibited for cleaning equipment or tools or for starting fires. Small quantities of gasoline may be transported only if in approved safety containers.
15. Gasoline engines must be turned off and cooled down prior to refueling. Fill gasoline engines every morning before beginning work and refuel after lunch before starting work.
16. Tools and equipment shall only be used for their designed purpose. Unsafe tools, equipment, unguarded machinery and defective or frayed electrical cords should be reported to the job foreman. At a minimum, extension cords must be inspected daily before their first use.
17. "No smoking" rules must be observed in posted areas. Smoking is only permitted in designated areas.
18. Tampering with or unauthorized removal of fire extinguishers from assigned locations is prohibited.
19. Riding of any construction equipment except by operator or maintenance personnel is prohibited. This includes the material hoists. Getting on or off vehicles or equipment while in motion is prohibited.
20. The operation of equipment or power tools without proper authorization or certification is prohibited.

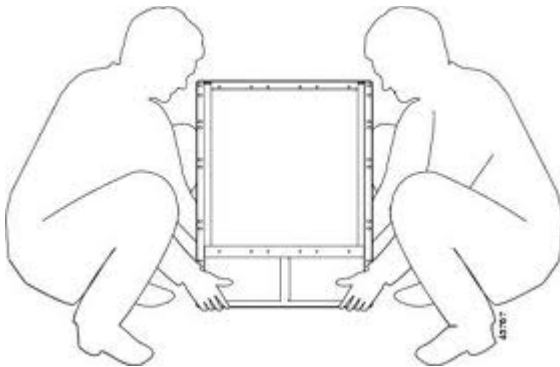
21. Seat belts shall be worn while operating or riding in all moving vehicles.
22. Cranes, backhoes or other equipment with booms must be operated with caution around power lines. Consult the job foreman for safe operating procedures.
23. No employee shall work under lifted loads. Equipment operators shall avoid carrying loads over employees.
24. No employee shall operate any machinery, equipment or tool unless he has been properly instructed in its use and is thoroughly familiar with all details of its operation.
25. No employee should pick up more than 50 pounds if the weight is more than 50 pounds employee should get assistance from a co-worker.

PROPER WAY TO LIFT OBJECTS



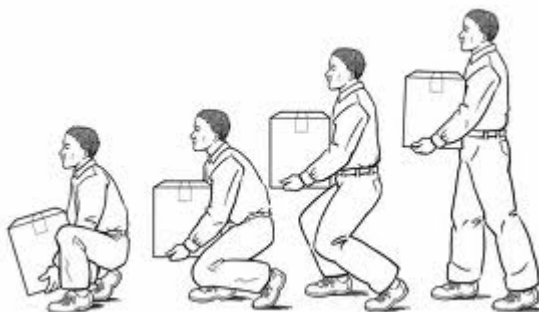
1. TALK TO EACH OTHER POSITION YOUR SELF.

COMMUNICATE



BEND YOUR LEGS TAKE A PROPER GRIP LIFT EVENLY.

CAREFULLY



BEND YOUR LEGS TAKE A FIRM GRIP PICK UP.

SLOWLY

Ladders

- a. *Do not use defective ladders.*
- b. Ladders must have safety stickers intact and legible (not painted over).
- c. inspect ladders before each use for cracks or splintered legs and check Locking mechanism to ensure the ladder will lock in place.
- d. Defective ladders shall be red-tagged and immediately reported to the Job foreman and then removed from the jobsite. If the ladder cannot be Immediately removed then it must be marked as “do not use” and ladder Legs taped together, if possible.
- e. Ladders should be used properly at all times

LADDER INSPECTION PROCEDURE

- a. missing, loose steps or rungs (they are loose if you can move them by hand)
- b. damage or worn non-slip feet
- c. loose screws, bolts or nuts
- d. loose or faulty spreaders, locks and other metal parts in poor decay
- e. cracks, sharp edges, on rails, rungs and exposed fiberglass
- f. cracked, split, worn or broken rails , braces, steps or rungs
- g. corrosion, oxidization and excessive wear
- h. Twisted or distorted rails. Check ladders for distortion by sighting along the rails. Twisted or bowed ladders are hazardous.
- i. Missing identification labels
- j.

STEP LADDDERS

- a. wobble
- b. loose or bent hinges and hinge spreaders
- c. broken stop on a hinge spreader

EXTENSION LADDERS

- a. Loose, broken or missing extensions lock
- b. Defective locks that do not seat properly when the ladder is extended
- d. sufficient lubrication of working parts
- e. defective cords, chains or ropes
- f. missing or defective pads or sleeves
- g. Should be placed at a pitch of 4:1 (vertical: horizontal) to optimize the combination of ladder strength, climbing balance and resistance to sliding.
- h. should be properly secured to the building/structure at the top
- i. The footing of the ladder should be secured on firm, level ground to improve stability.
- j. The top of the ladder should extend a minimum of 3 feet above the level you are accessing (3 feet=3 ladder rungs or spaces).

LADDERS SHOULD NOT BE USED IN THE FOLLOWING MANNER:

- A. Do not stand or sit on the top 2 steps.
- B. Do not walk ladders or reach out far enough that your belt buckles exceeds the vertical rails of the ladder. You must get down and move the ladder to the desired area/position.
- C. do not stand on a ladder placed in the bed of a truck
- D. Do not use a closed a-frame ladder by leaning it against anything. Use an extension ladder.
- E. Tools and other objects shall not be left on scaffolds, ladders or overhead working surfaces.

GUARDS

All machine guards shall be kept in place while machinery is in operation. Tampering with machine guards is prohibited. Any removal of machine guards requires the prior approval in written of the manufacture. All guards are to be promptly replaced after the replacement of blades or saw blades ect. (Only for replacement of blades, saw blades or grinder wheels).

POWER TOOLS

- a. Read the owner's manual before using any tool. Never use a tool unless. Trained to do so. Inspect it before each use.
- b. Choose the correct tool for the job
- c. Keep work areas around power tools clear
- d. Wear eye, hearing and respiratory protection when applicable.
- e. Power tools and/or extension cords shall be properly grounded or Double insulated
- f. Personal protection, use appropriate safety equipment, such as goggles Earplugs and do not wear canvas shoes when working with power tools. Avoid loose fitting clothes that might become entangle in a power tool.
- g. remove rings and other jewelry
- h. do not operate power tools when you are ill, fatigue or taking any medication that would impaired your ability to use or maneuver the tools
- i. Inspect and clean the cord regularly. inspect the rounding connections
- j. Use a ground fault circuit interrupter when working with power tools.
- k. Always turn off and unplug a power tool before: (1) adjusting, oiling, cleaning or repairing it; (2) attaching an accessory or (3) changing bits, blades or grinding wheels. Lockout tools when not in use.

- l. Unplug tools by pulling directly on the plug. Jerking on the cord can cause damage to the tool.
 - m. when working on a scaffold or a ladder rest power tools on a flat surface or in a bin secure to the ladder itself
 - n. Never carry heavy tools up the ladder. With the help of an assistant(s) to elevate the heavy tool.
 - o. Stop working and turn off the power tool you are working with if distracted by something or someone. Never look away from your work when operating a power tool.
-
- p. Merit electric has decided that employees will use gfci protection rather than adopting an assured grounding program.
 - q. Know the correct way to lift heavy objects (secure footing, firm grip, back straight, lift with legs). Ask for help if necessary.
 - r. Acetylene, oxygen and all other gas cylinders shall be stored in upright position and secured by tying or blocking into position.
 - s. No employee shall remove a guardrail or cover from any floor opening without specific authority. The guardrail or cover will only be removed while performing work necessitating the removal of guardrail or cover and will replace them as soon as the work is done.

SAFETY INSPECTION

MERIT ELECTRIC COMPANY, LTD

Management, safety director, or a combination of the two at any given time but at a minimum of twice a month will conduct safety inspection of jobsites. If required by the client, more frequent inspections may be conducted. Inspections are meant to be a means of communication between management safety requirements and jobsite safety performance. General foremen are encouraged to inspect their jobsites daily to comply with the merit electric safety program. OSHA standards are required to be met at all times and anything less must be corrected immediately.

JOBSITES WILL BE INSPECTED FOR THE FOLLOWING:

- A. general safety
- B. sanitation
- C. housekeeping
- D. fire prevention
- E. ppe
- F. hand and power tools
- G. vehicles and equipment
- H. trenching and excavation
- I. concrete and masonry
- J. electrical
- K. fall protection
- L. scaffolding
- M. stairways and ladders

The jobsite inspection checklist is used only as a guideline. All, some, or more items may/may not be inspected. The jobsite supervisor will receive a copy of the checklist if requested. A copy of jobsite inspections will be kept at the main office and will be kept for at least one year.

EMPLOYEE SAFETY MEETINGS

MERIT ELECTRIC COMPANY, LTD

management feels strongly that safety meetings conducted by the supervisors/foremen are necessary to promote employer/employee relations, solve problems, and to help keep everyone informed of what is being done and what needs to be done. Not only to reduce accidents, but also to help make our jobs and operations run smoother.

JOBSITE SAFETY MEETINGS

- a. Foremen or other competent person will conduct safety meetings at least weekly.
- b. Safety meetings will be documented to include safety topic, personnel attending, signatures of employees and the date meeting was held.
- c. If required, the client will receive a copy of meetings. If client does not require a copy, they will be forwarded to the safety director once a month.

SERVICE DEPT. SAFETY MEETINGS

- a. Safety director or other competent person will conduct safety meetings weekly at the main office.
- b. safety meetings will be documented to include safety topic, personnel Attending, signatures of employees and the date meeting was held
- c. Safety director will maintain training documents.

MANAGEMENT SAFETY MEETINGS

- a. Job foremen will meet at the main office with the safety director and management at least once every 3 months to discuss safety policies, safety issues, recent mishaps and concerns and various other topics.
- b. Foremen will be informed of the date no later than 1 week prior to the meeting.

SAFETY MEETING TOPICS

- a. Safety rules and standards as they apply to operations.
- b. How to perform specific jobs in the safest way and how to avoid accidents.
- c. Previous accidents (merit electrics as well as any others on site).
- d. Effects of injuries to employees, their families, and the company.
- e. Company safety policy.
- f. Inspection results, progress on the job, and future problems.
- g. Encouraging employees to participate in-group discussions and mention any safety worries or issues regarding their job requirements.

TRAINING

MERIT ELECTRIC COMPANY, LTD

The safety director will implement a training program that will provide for the training of employees as directed by management and in accordance with OSHA standards.

- a. Personnel to be trained
 - New and rehired employees.
- d. Existing employees requiring/requesting training.
- e. Subcontractors.
- A. The safety director or other educational facility as required will provide training and retraining. new employees will receive training for:
 - a. General industry safety (ladders, tools, etc.)
 - b. lockout/tag out
 - c. injury handling procedures
 - d. excavation/trenching
 - e. hazcom/labeling
 - f. ppe to be used
- B. if applicable, site specific training for highly hazardous conditions will be conducted by the client or client representative on hazards associated with their facility for the following:
 - a. fire
 - b. toxic
 - c. explosion
 - d. Specific-such as noise, heat, cold, etc.
- C. supervisor training will be given as follows:
 - a. semi-annual safety meetings
 - b. on jobsite as needed
 - c. during or after accident investigations
 - d. to allow them to train their employees

- e. To inform them of new/updated safety program requirements.

D. training records

- a. All employee-training records will be retained until no longer employed at merit electric including formal education, certifications, certification cards and company training. The general contractor should retain any weekly safety training done on site by the general contractor.
- b. These records are to be accessed to help in determining the employee's safety knowledge and safe working ability in a specific craft or job function. records shall contain the following:
 - i. identity of employee
 - ii. date of training
 - iii. type of training
 - iv. signature
- c. Training records should be kept on site and available to clients for review while working in a facility or remote location. The senior site manager or designated site supervisor will keep these records.
- d. In the event that these records are not on site and are requested by the client or other qualified personnel, they will be provided by the safety director as soon as possible and no later than the end of the next business day.

ACCIDENT INVESTIGATION AND REPORTING

MERIT ELECTRIC COMPANY, LTD

Each general foreman is required to personally investigate and report accidents occurring on the jobsite that cause personal injury or damage to material or equipment. An investigation report is to be completed in detail.

- A. If an accident occurs, the general foreman is to complete an investigation report form by the end of the next scheduled workday.
- B. A copy is to be forwarded to the main office to the safety director.
- C. Accident reports will be used to determine causes of accidents, accident trends, and to develop corrective action throughout the company.
- D. As noted in injury handling procedure, this form is in addition to the employers' first report of injury form.

The incident/accident investigation report is on the next page.

MERIT ELECTRIC COMPANY

LOCKOUT/TAGOUT PROGRAM



MERIT ELECTRIC COMPANY, LTD.

LOCKOUT/TAGOUT PROGRAM

I. Objective

II. Assignment of Responsibility

III. Procedures

- A. Purpose
- B. Responsibility
- C. Preparation for lockout (tag out)
- D. Individual Employee Control Procedure
- E. Sequence of lockout/tag out procedures
- F. Restoring equipment and/or electrical supply to normal condition
- G. Procedure involving one or more persons
- H. Procedure involving one or more shifts
- I. Complex lockout/tag out procedures
- J. Contractor Compliance
- K. Disciplinary actions
- L. Equipment
- M. Review
- N. Training

IV. Attachments

- A. List of Authorized Personnel for Lockout/Tag out Procedure Form
- B. Certification of Training of Authorized/Affected Personnel Form
- C. Lockout/Tag out Procedure Form
- D. Lockout/Tag out Procedure Form- Sample Page
- E. Lockout/Tag out Activity Log
- F. Lockout/Tag out Quiz
- G. Contractor Compliance Form

V. References

MERIT ELECTRIC COMPANY

Lockout/Tag out Procedure

I. OBJECTIVE

The objective of this procedure is to establish a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being installed, repaired, cleaned and/or serviced. This program serves to:

- A. Establish a safe and positive means of shutting down machinery, equipment and systems.
- B. Prohibit unauthorized personnel or remote control systems from starting machinery or equipment while it is being serviced.
- C. Provide a secondary control system (tag out) when it is impossible to positively lockout the machinery or equipment.
- D. Establish responsibility for implementing and controlling lockout/tag out procedures.
- E. Ensure that only approved locks, standardized tags and fastening devices provided by the company will be utilized in the lockout/tag out procedures.

II. ASSIGNMENT OF RESPONSIBILITY

- A. **Safety Manager** will be responsible for implementing the lockout/tag out program.
- B. **Foreman/Supervisor** is responsible for enforcing the program and insuring compliance with the procedures on their jobsite.
- C. **Authorized employees** (those listed in Attachment A) are responsible for following established lockout/tag out procedures. An authorized employee is defined as a person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under 1910.147, The Control of Hazardous Energy (lockout/tag out).
- D. **Affected employees** (all other employees on the jobsite) are responsible for insuring they do not attempt to restart or re-energize machines or equipment that are locked out or tagged out. An affected employee is defined as a person whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tag out, or whose job

requires him/her to work in an area in which such servicing or maintenance is being performed.

III. PROCEDURES

- A. Purpose.** This procedure establishes the minimum requirements for lockout (tag out) of electrical energy sources in accordance with Section 120.2 of the *2009 NFPA 70E*. It is used to ensure that conductors and circuit parts are disconnected from sources of electrical energy, locked (tagged), and tested before work begins where employees could be exposed to dangerous conditions. Sources of stored energy, such as capacitors or springs shall be relieved of their stored energy, and a mechanism shall be engaged to prevent the re-accumulation of energy.
- B. Responsibility.** All employees shall be instructed in the safety significance of the lockout (tag out) procedure. All new or transferred employees and all other persons whose work operations are or might be in the area shall be instructed in the purpose and use of this procedure. The Project Foreman shall ensure that appropriate personnel receive instructions on their roles and responsibilities.

All authorized employees installing a lockout (tag out) device shall list the following information on each job specific lockout (tag out) device;

Tag front: Name of person installing the tag, his/her cell phone number, company name, and date

Tag back: Area of Work, Project Foreman's name, and his/her cell phone number

C. Preparation for Lockout (Tag out).

1. Review current diagrammatic drawings (or other equally effective means), tags, labels, and signs to identify and locate all disconnecting means to determine that power is interrupted by a physical break and not de-energized by a circuit interlock. Make a list of disconnecting means to be locked (tagged)
2. Review disconnecting means to determine adequacy of their interrupting ability. Determine if it will be possible to verify a visible open point, or if other precautions will be necessary.

3. Review other work activity to identify where and how other personnel might be exposed to sources of electrical energy hazards. Review other energy sources in the physical area to determine employee exposure to sources of other types of energy. Establish energy control methods for control of other hazardous energy sources in the area.
4. Provide an adequately rated voltage detector to test each phase conductor or circuit part to verify that they are de-energized. Provide a method to determine that the voltage detector is operating satisfactorily.
5. Where the possibility of induced voltages or stored electrical energy exists, call for grounding the phase conductors or circuit parts before touching them. Where it could be reasonably anticipated that contact with other exposed energized conductors or circuit parts is possible, call for applying ground connecting devices.

D. Individual Employee Control Procedure. The individual employee control procedure can be used when equipment with exposed conductors and circuit parts is de-energized for minor maintenance, servicing, adjusting, cleaning, inspection, operating corrections, and the like, and the work shall be permitted to be performed without the placement of lockout/tag out devices on the disconnecting means, provided the disconnecting means is adjacent to the conductor, circuit parts, and equipment on which the work is performed, the disconnecting means is clearly visible to all employees involved in the work, and the work does not extend beyond the work shift.

E. Sequence of Lockout (Tag out) System Procedures.

1. The affected employees shall be notified that a lockout (tag out) system is going to be implemented and the reason therefore. The qualified employee implementing the lockout (tag out) shall know the disconnecting means location for all sources of electrical energy and the location of all sources of stored energy. The qualified employee shall be knowledgeable of hazards associated with electrical energy.
2. If the electrical supply is energized, the qualified employee shall de-energize and disconnect the electric supply and relieve all stored energy.
3. Lockout (tag out) all disconnecting means with lockout (tag out) devices.
4. Attempt to operate the disconnecting means to determine that operation is prohibited.

5. A voltage-detecting instrument shall be used. Inspect the instrument for visible damage. DO NOT PROCEED IF THERE IS AN INDICATION OF DAMAGE TO THE INSTRUMENT UNTIL AN APPROVED DEVICE IS AVAILABLE.
6. Verify proper instrument operation prior to testing for absence of voltage.
7. Test for the absence of voltage.
8. Verify proper instrument operation after testing for absence of voltage.
9. Where required, install grounding equipment/conductor device on the phase conductors or circuit parts, to eliminate induced voltage or stored energy, before touching them. Where it has been determined that contact with other exposed energized conductors or circuit parts is possible, apply ground connecting devices rated for the available fault duty.
10. The equipment and/or electrical source are now locked out (tagged out).

F. Restoring the Equipment and/or Electrical Supply to Normal Condition.

1. After the job or task is complete, visually verify that the job or task is complete.
2. Remove all tools, equipment, and unused materials and perform appropriate housekeeping.
3. Remove all grounding equipment/ conductor/ devices.
4. Notify all personnel involved with the job or task that the lockout (tag out) is complete, that the electrical supply is being restored, and to remain clear of the equipment and electrical supply.
5. Perform any quality control tests or checks on the repaired or replaced equipment and/ or electrical supply.
6. Remove lockout (tag out) devices by the person who installed them.
7. Notify the equipment and/or electrical supply owner that the equipment and/or electrical supply are ready to be returned to normal operation.
8. Return the disconnecting means to their normal condition.

G. Procedure Involving More Than One Person. For simple lockout/ tag out and where more than one person is involved in the job or task, each person shall install his/her own personal lockout (tag out) device.

H. Procedure Involving More Than One Shift. When the lockout (tag out) extends for more than one day, the lockout (tag out) shall be verified to be still in place at the beginning of the next day. Where the lockout (tag out) is continued on

successive shifts, the lockout (tag out) is considered to be a complex lockout (tag out).

For complex lockout (tag out), the authorized employee shall identify the method for transfer of the lockout (tag out) and of communication with all employees.

I. Complex Lockout (Tag out). A complex logout/tag out plan is required where one or more of the following exist:

- (1) Multiple energy sources (more than one)
- (2) Multiple crews
- (3) Multiple crafts
- (4) Multiple locations
- (5) Multiple employers
- (6) Unique disconnecting means
- (7) Complex or particular switching sequences
- (8) Continues for more than one shift, that is, new workers

1. All complex lockout/tag out procedures shall require a written plan or procedure.
2. An authorized employee shall be involved with the complex lockout/tag out procedure.
3. The authorized employee shall fill out a procedure form (Attachment C), and communicate that plan to all persons engaged in the job or task. The authorized employee in charge shall be held accountable for safe execution of the complex lockout/tag out plan. The complex lockout/tag out plan must address all the concerns of employees who might be exposed, and they must understand how electrical energy is controlled. The authorized employee in charge shall ensure that each person understands the hazards to which they are exposed and the safety-related work practices they are to use.
4. All complex lockout/tag out plans identify the method to account for all persons who might be exposed to electrical hazards in the course of the lockout/tag out. Each individual will install his/her own personal lockout or tag out device

5. The authorized employee in charge can install locks/tags, or direct their installation on behalf of other employees.
6. The authorized employee in charge can remove locks/tags or direct their removal on behalf of other employees, only after all personnel are accounted for and ensured to be clear of potential electrical hazards.
7. Where the complex lockout (tag out) is continued on successive shifts, the authorized employee in charge shall identify the method for transfer of the lockout and of communication with all employees.

J. Contractor Compliance

1. All contractors on the jobsite that require their equipment to be energized must comply with Merit Electric's Lockout/Tag out Procedures.
2. Contractors must provide their own means of locking out their equipment prior to Merit Electric energizing any circuits feeding equipment. Lockout/tag out procedure for contractors will involve the equipment's service disconnecting means, where applicable, (not including panel boards)
3. Contractors will assume responsibility for locking out equipment by coordinating with the jobsite foreman on proper procedures, and completing and signing **Attachment G.**
4. Any contractor that fails to comply with Merit Electric's procedures will be denied the energizing of their equipment, until compliance has been met.

K. Disciplinary actions.

1. Knowingly violating this procedure will result in disciplinary action(s) in accordance with Company Policy.

2. Knowingly operating a disconnecting means with an installed lockout/tag out device without authorization can result in immediate termination.

L. Equipment.

1. Locks shall comply with Section 120.2 (E) (3) (a) through (g) of the 2009 NFPA 70E.
2. Tags shall comply with Section 120.2 (E) (4) (a) through (d) of the 2009 NFPA 70E.
3. Voltage detecting device(s) shall comply with Section 110.9 (A) (1) through (4) of the 2009 NFPA 70E.

M. Review. This program will be reviewed at least periodically, and employees shall be trained when necessary.

N. Lockout/Tag out Training. Recommended, but not limited to, the following:

- (1) Recognizing lockout/tag out devices
- (2) Installing lockout/tag out devices
- (3) Duty of authorized employee in completing a procedure form
- (4) Duty of employee in executing procedures
- (5) Authorized and unauthorized removal of locks/tags
- (6) Enforcing execution of lockout/tag out procedures
- (7) Individual employee control of energy
- (8) Simple lockout/tag out
- (9) Complex lockout/tag out
- (10) Using single line and diagrammatic drawings to identify sources of energy
- (11) Use of tags and warning signs
- (12) Release of stored energy
- (13) Personnel accounting methods
- (14) Grounding needs and requirements
- (15) Safe use of voltage detecting instruments

- * After receiving training, all employees will sign and date on **Attachment B**. **Authorized** employees will also sign **Attachment A**, and will be issued a padlock and tag with an identification number (if applicable). This information will be documented on **Attachment A** and kept on file by the foreman and Safety Manager.

Jobsite _____ Date _____

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ATTACHMENT B

MERIT ELECTRIC COMPANY
Certification of Training

I certify that I have received training as an authorized/affected employee under the *Merit Electric Company Lockout/Tag out program*. I further certify that I understand the procedures and will abide by those procedures.

EMPLOYEE SIGNATURE

DATE

ATTACHMENT C
MERIT ELECTRIC COMPANY
Lockout/Tag out Procedure Form

Date _____

Procedure Description

Equipment or System

Name _____

Description _____

Location _____

Lockout Device Needed

Device Description

Lockout Procedure

Specific Procedure Used

Verification

Steps Taken To Verify Lockout is Complete

Release and Start Up

Specific Procedure Used

ATTACHMENT D- Sample Page

MERIT ELECTRIC COMPANY
Lockout/Tag out Procedure Form

Date 10/29/2009

Procedure Description

Equipment or System

Name Panel L1A

Description Fed from transformer "TL1A" via Panel "H1A"

Location 1st Floor Main Electrical Room

Lockout Device Needed

Device Description

Clamp-on circuit breaker lockout with padlock

Lockout Procedure

Specific Procedure Used

Notified all affected employees, turned breaker to "off" position, installed clamp-on lock over breaker handle with padlock and tag.

Verification

Steps Taken To Verify Lockout is Complete

Verified device installed correctly, used an approved voltage meter to check if any voltage still exists

Release and Start Up

Specific Procedure Used

Notified all affected employees, made sure area is free of debris, tools, etc. Removed lockout device and tag from breaker, reenergized equipment.

ATTACHMENT E

MERIT ELECTRIC COMPANY

Lockout/Tag out Activity Log

Employee

Equipment

Lockout Time/Date

Reason

This image shows a single page of white paper with horizontal black lines, resembling notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

ATTACHMENT F
MERIT ELECTRIC COMPANY

Lockout/Tag out Quiz

Name: _____ Date: _____

SCORE _____

CIRCLE THE CORRECT ANSWER.

1. What is the purpose of the lockout tag out procedure?
 - A. Make employees do extra work
 - B. Another government mandate
 - C. Help provide for employee protection
2. The first step in lockout tag out procedure is notifying all affected employees.
True or False
3. Lockout means:
 - A. Placing a notice on the power source to warn workers and others not to turn the power on.
 - B. Blocking the flow of energy from the power source to the equipment.
 - C. Making sure no one can enter your work area.
4. A tag provides the same level of physical protection as a lockout device.
True or False
5. Employees and others may remove a lock/tag affixed by an authorized employee when the need exists.
True or False
6. Who is allowed to lockout equipment?
 - A. all employees
 - B. affected employees
 - C. authorized employees
7. Number the steps in order for lockout tag out procedure
 - ___install lockout devices ___verify job is complete ___restore power
 - ___de-energize equipment ___notify affected employees
 - ___perform job task ___test equipment for absence of energy
8. You do not have to install a lock and tag if there is already one in place on the equipment.
True or False

9. If you see a lock/tag that is not installed properly or is not legible, you should:
- A. Ignore it.
 - B. Remove it
 - C. Report it immediately.
10. Other contractors do not have to comply with the lockout tag out procedures.
- True or False

ANSWER KEY FOR LOCKOUT/TAGOUT QUIZ

1. C
2. T
3. B
4. F- a tag cannot prevent someone from energizing equipment
5. F- only the person who installed the lock and tag may remove it
6. C
7.
 1. Notify affected employees
 2. De-energize equipment
 3. Install lockout devices
 4. Test equipment for absence of energy
 5. Perform job task
 6. Verify job is complete
 7. Restore power
8. F- each person working on the equipment must install their own tag
9. C
10. F- all contractors must follow procedures

ATTACHMENT G

MERIT ELECTRIC COMPANY
Contractor Compliance Form

I, _____, will comply with Merit Electric's
Contractor name

Lockout/tag out procedures. I will coordinate the execution of the procedures

With Merit Electric's jobsite foreman. I am aware that if I do not comply

With the procedures, I can be denied the energizing of my equipment.

Company Representative

Date

NFPA 70E

29 CFR 1910

29 CFR 1926

**AVAILABLE UPON
REQUEST**

MERIT ELECTRIC COMPANY, LTD.

**HAZARD COMMUNICATION
PROGRAM**

MERIT ELECTRIC COMPANY, LTD

HAZARDOUS COMMUNICATION PROGRAM

I. PURPOSE

The purpose of this Written Hazard Communication program is to ensure that:

1. Hazardous substances present in the work place are properly identified and labeled.
2. Employees have access to information on the hazards of these substances.
3.  Employees are provided with information on how to prevent injuries or illnesses due to exposure to these substances.
4. Identify by job title that has the responsibility for maintaining the program, the MSDS sheets, conduct training, etc.

Note: This program will be available to all employees for review and a copy will be located in the following area(s):

Location:

- 1. Merit Electric main office; 5626 Mitchelldale, Houston, TX 77092**
- 2. Any jobsite maintaining hazardous material**
- 3. Any service vehicle carrying hazardous material**

II. AUTHORITY AND REFERENCE

Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1200
Dept. of Commerce (Chapter 32) (COMM) 32.15

III. HAZARD DETERMINATION

A. A "hazardous substance" is a physical or health hazard that is listed as such in either:

1. 29 CFR Part 1910, Subpart Z, *Toxic and Hazardous Substances*, Occupational Safety and Health Administration.

2. *Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment* (latest edition), American Conference of Governmental Industrial Hygienists (ACGIH).
- B. A "hazardous substance" is regarded as a carcinogen or potential carcinogen if it is identified as such by:
1. National Toxicology Program (NTP), *Annual Report on Carcinogens* (latest edition).
 2. International Agency for Research on Cancer (IARC) *Monographs* (latest edition).
 3. 29 CFR Part 1910, Subpart Z, *Toxic and Hazardous Substances*, Occupational Safety and Health Administration.
- C. Manufacturers, importers and distributors will be relied upon to perform the appropriate hazard determination for the substances they produce or sell.
- D. The following materials are not covered by the Hazard Communication Standard:
1. Any hazardous waste as defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 USC 6901 et seq.) when subject to regulations issued under that act by the Environmental Protection Agency.
 2. Tobacco or tobacco products.
 3. Wood or wood products. **NOTE:** Wood dust is not exempt since the hazards of wood dust are not "self-evident" as are the hazards of wood or wood products.

4. Consumer products (including pens, pencils, adhesive tape) used in the work place under typical consumer usage.
5. Articles (i.e. plastic chairs).
6. Foods, drugs, or cosmetics intended for personal consumption by employees while in the work place.
7. Foods, drugs, cosmetics, or alcoholic beverages in retail stores packaged for retail sale.
8. Any drug in solid form used for direct administration to the patient (i.e. tablets or pills).

IV. APPLICATION

This program applies to the use of any hazardous substance which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

V. RESPONSIBILITY FOR COMPLIANCE

A. The administration of this program will be the responsibility of Rodrigo Jimenez. The administrative responsibilities will include:

1. Identification of the employees to be included in the Hazard Communication Program.

2. Development and maintenance of a hazardous substance master inventory.
 3. Coordination and supervision of employee training.
 4. Coordination and supervision of the facility's container labeling program.
 5. Coordination of any necessary exposure monitoring.
 6. Coordination and supervision of required recordkeeping.
 7. Periodic evaluation of the overall program.
- B. All employees are responsible for following safe work practices and using proper precautions required by the guidelines in this program.

VI. HAZARDOUS SUBSTANCE INVENTORY

- A. Rodrigo Jimenez is responsible for compiling, maintaining, and updating, when necessary, a master list of hazardous substances used or produced in the facility. The inventory list will include the common identity or trade name of the product and the name and address of the manufacturer. Hazardous substances will be listed alphabetically by manufacturer. Substances which are not in containers will also be included on the inventory list, e.g., welding fumes, carbon monoxide from a fork lift, etc. (See Form #1)

VII. LABELING

- A. Whoever receives the material is responsible for evaluating labels on incoming containers. Each label must contain the following information:
1. Identity of the substance.
 2. Appropriate hazard warning.

3. Name and address of the manufacturer.

- B. If the label is not appropriate, Rodrigo Jimenez should be notified and he will notify the manufacturer (or supplier) that the label is not adequate. (See Form #2)

Rodrigo Jimenez will send a second request to the manufacturer if the correct label is not received within 30 days. (See Form #3)

Rodrigo Jimenez is responsible for preparing an appropriate label if one is not supplied by the manufacturer within the second 30 days.

A container will not be released for use until an appropriate label is affixed to the container.

- C. Labels will be removed if they are incorrect. When the container is empty, it may be used for other materials provided it is properly cleaned and relabeled.
- D. Each department supervisor is responsible for ensuring that all containers used in his/her department are labeled properly and remain legible. Defacing labels or using them improperly is prohibited.
- E. Unlabeled portable containers, such as pails and buckets, should be used by one employee and emptied at the end of each shift. If the secondary containers are used by more than one employee and/or its contents are not emptied at the end of the shift, the department supervisor is responsible for labeling the container with either a copy of the original label or with a generic label which has a space available for appropriate hazard warnings.

VIII. MATERIAL SAFETY DATA SHEETS

- A. MSDS's will be available to all employees on all hazardous substances to which there is potential or actual exposure. Brian Renault is responsible for ensuring that MSDS are available on all incoming products. A product will not be released for use until a completed MSDS is on file. Form #4 provides the minimum required information on all MSDS's.

If the MSDS is not available, Brian Renault or Rodrigo Jimenez will access the MSDS from the manufacturer's website and place a copy in the master MSDS list

- B. Rodrigo Jimenez is responsible for the review of all incoming MSDS's. If the MSDS is not complete, it will be returned to the manufacturer with a request for the missing **information**. (*See* Form #7)

Rodrigo Jimenez will send a second request for the missing information if a complete MSDS is not received within 30 days. (*See* Form #8)

- C. Brian Renault will request an MSDS on the purchase orders of all new products. (*See* Form #9)

- D. Rodrigo Jimenez is responsible for compiling and updating the master MSDS file. This file will be kept at Merit Electric, 5626 Mitchelldale, and Houston, TX 77092.

Copies of MSDS's will be kept on all jobsites.

- E. Employees will have access to these MSDS's on all jobsites. Copies will be made available upon request to Rodrigo Jimenez. (*See* Form #10)

- F. Rodrigo Jimenez is responsible for updating the data sheets to include new information as it is received. A notice will be posted to inform employees that revised information has been received. (See Form #11)

IX. EMPLOYEE TRAINING

- A. Prior to starting work with hazardous substances, each employee will attend a Hazard Communication Training Session where they will receive information on the following topics:
1. Policies and procedures related to the Hazard Communication Standard.
 2. Location of the written Hazard Communication Program.
 3. How to read and interpret an MSDS.
 4. Location of MSDS's.
 5. Physical and health hazards of hazardous substances in their work area.
 6. Methods and observation techniques to determine the presence or release of hazardous chemicals.
 7. Work practices that may result in exposure.
 8. How to prevent or reduce exposure to hazardous substances.
 9. Personal protective equipment.

10. Procedures to follow if exposure occurs.

11. Emergency response procedures for hazardous chemical spills.

- B. Upon completion of the training program, each employee will sign a form documenting that he/she has received the training. (*See Form 12*)
- C. Whenever a new employee is transferred or hired, he/she will be provided training regarding the Hazard Communication Standard. The training session will be conducted by a competent person before the start of his/her employment if possible.
- D. Rodrigo Jimenez is responsible for identifying and listing any non-routine hazardous task performed at this facility. Rodrigo Jimenez will conduct training on the specific hazards of the job and the appropriate personal protective equipment and safety precautions and procedures. (*See Form 13*)
- E. When a new substance is added to the inventory list, Rodrigo Jimenez is responsible for reviewing the MSDS for potential health effects. If the product presents a new health hazard (causes health effects unlike those covered in the training session), Rodrigo Jimenez is responsible for notifying all affected employees about the new health effects which result from exposure to the new substance.

X. DISCIPLINARY ACTIONS

When an employee is not following safety and health rules regarding working with a hazardous substance, disciplinary action will be taken.

XI. RECORD KEEPING

- A. All MSDS's will be kept until the use of the substance has been discontinued.
EXCEPTION: If an employee exposure to a particular hazardous chemical

occurs, the MSDS for that product will become part of the employee's medical records.

Medical records must be kept for **30** years.

Note: “Exposure” or “exposed” means that an employee is subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes past exposure, but does not include situations where the employer can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical non-occupational situations.

XII. COMMUNITY HAZARD COMMUNICATION

Rodrigo Jimenez is responsible for responding to requests from members of the community on hazardous substances used in the facility.

*** XIII. EMERGENCY RESPONSE PROCEDURES FOR HAZARDOUS CHEMICAL SPILLS**

A. When a hazardous chemical spill occurs, follow these procedures:

1. Move all employees away from spill to a safe environment.
2. Call 911 or the designated emergency response number in your area to notify the
Necessary response team for the hazardous chemical spill.
3. Retrieve the Hazard Communication Information Binder, if possible.
 - a. Locate the MSDS for the hazardous chemical which spilled.

- b. If requested, provide the MSDS to the Emergency Response Team.

Note: Do not try to contain the spill. The Emergency or Hazardous Material Response Team is trained to deal with hazardous chemical spills.

XIV. PROGRAM EVALUATION

Rodrigo Jimenez will conduct an evaluation of the Hazard Communication program annually. The individual responsible for the items identified for improvement will be notified verbally. It is expected that action will be taken to correct the item within five working days. (*See Form #16*)

This written program has been developed by the Bureau of State Risk Management, Department of Administration and is available on computer disk. (File name *a:\hazcom.doc*). It may be adapted to fit the particular needs of your facility. The program was adapted from a written program originally developed by the Occupational Safety and Health Administration (OSHA).

LIST OF SAMPLE FORMS AND LETTERS

Form 1	Hazardous Substance Inventory
Form 2	Letter to Request a Complete Label
Form 3	Second Request for a Complete Label
Form 4	Checklist of Required MSDS Information
Form 5	Letter to Request a Material Safety Data Sheet
Form 6	Second Request for a Material Safety Data Sheet
Form 7	Letter to Request a Complete MSDS
Form 8	Second Request for a Complete MSDS
Form 9	Letter to Accompany Purchase Order
Form 10	Request for Chemical Hazard Information
Form 11	Employee's New Substance Signature Form
Form 12	Employee Hazard Communication Training Record
Form 13	Non-Routine Hazardous Task Training Documentation Form
Form 14	Documentation of Information Given to Contractors
Form 15	Letter to Contractors
Form 16	Hazard Communication Annual Program Summary
Form 17	Employee Hazard Communication Interview Form

[Type text]

Form #1

**hazardous substance inventory
(Jobsite)**

Organization: _merit electric_ **location:** _____

manufacturer	product name	quantity	msds yes/no	work area
3m	contact cleaner	varies	y	jobsite
3m	fire barrier	varies	y	jobsite
3m	vinyl tape	varies	y	jobsite
Biostop	caulk	varies	y	jobsite
Carlon	primer	varies	y	jobsite
Carlon	pvc glue	varies	y	jobsite
chevron	gas/diesel	varies	y	jobsite
Clorox	bleach	varies	y	jobsite
Dap	self-leveling concrete	varies	y	jobsite
devguard	paint/stain	varies	y	jobsite
Erico	cadweld	varies	y	jobsite
Ideal	wire-pulling lubricant	varies	y	jobsite
Irwin	chalk	varies	y	jobsite
klean strip	acetone/stripper	varies	y	jobsite
quikrete	dry concrete	varies	y	jobsite

[Type text]

rectorseal	pvc cement	varies	y	jobsite
Shell	gas/diesel	varies	y	jobsite
Startex	xylene	varies	y	jobsite
Co	tremstop acrylic	varies	y	jobsite
Zep	purple cleaner/degreaser	varies	y	jobsite

HAZARDOUS SUBSTANCE INVENTORY
(Cont.)

Form #1

Manufacturer	Product Name	Quantity	MSDS Yes/No	Work Area
Ocal	PVC Touch Up Spray	Varies	Y	Jobsite
Rustoleum	Orange Marking Paint	Varies	Y	Jobsite
Rustoleum	Galvanized Spray Paint	Varies	Y	Jobsite

Completed by: Abel Zuniga

Date: March 30, 2010

[Type text]

Form #2 LETTER TO REQUEST A COMPLETE LABEL

TO: Chemical Manufacturer, Vendor, and Distributor

FROM: (Agency Name, Address)

DATE:

RE: Chemical Labels

We are using (number) of your products and in evaluating the label(s) on (this/these) product(s), we determined that the label(s) (is/are) not appropriate for the following reason(s):

Product Name

Reason Label Is Not Appropriate

Please clarify the wording on (this/these) label(s) or send (a) revised label(s). Your prompt attention is necessary for us to fully implement our Hazard Communication Program. Please respond to this request no later than (date 14 days after the date of this letter).

Thank you for your cooperation.

- * A tickler file should be established to notify the responsible individual in 14 days that their request for a revised label has not been received and that a second notice is needed.**

[Type text]

Form #3

SECOND REQUEST FOR A COMPLETE LABEL

TO: Chemical Manufacturer, Vendor, and Distributor

FROM: (Agency Name, Address)

DATE:

RE: Labels

On (date) we notified you that the warning label for your product(s) was incomplete. The label is not appropriate for the following reason(s):

Product Name

Reason Label Is Not Appropriate

We requested that you supply us with this information by (date). Please clarify the wording on (this/these) label(s) or send (a) revised label(s). Your prompt attention is necessary for us to fully implement our Hazard Communication Program. Please respond to this request no later than (date 14 days after the date of this letter).

Thank you for your cooperation.

Form #4

[Type text]

CHECKLIST OF REQUIRED MSDS INFORMATION

The Hazard Communication Standard 1910.1200 requires that 13 items of information be included in Material Safety Data Sheets provided to purchasers. There is no specified order for these items; they may be found anywhere on the MSDS. If the preparer of the MSDS has found no relevant information for a given item, the MSDS must be marked to indicate that no applicable information was found. This checklist should be used to determine the completeness of the MSDS. It does not assess the accuracy of the information.

Check Box If Item Is Complete

- 1. The identity used on the label.**
- 2. Chemical and common names - may be the same as #1.**
- 3. Physical and chemical characteristics of the hazardous ingredients (e.g., flash Point, appearance and odor).**
- 4. Physical hazards (e.g., combustible, unstable).**
- 5. Health hazards (e.g., corrosive) plus signs and symptoms of exposure and medical conditions aggravated by exposure.**
- 6. Primary route(s) of entry (e.g., inhalation).**
- 7. Air exposure limits (e.g., PEL, TLV).**
- 8. Carcinogenicity.**
- 9. Precautions for safe handling and use (e.g., storage, waste disposal).**
- 10. Control measures (e.g., personal protection).**
- 11. Emergency and first aid procedures.**

[Type text]

12. Date of preparation of MSDS.

13. Name/address/phone number of responsible party.

PRODUCT: _____

MANUFACTURER: _____

DATE OF MSDS: _____

CHECKED BY: _____

[Type text]

Form #5

LETTER TO REQUEST MSDS

TO: Chemical Manufacturer, Vendor, and Distributor

FROM: (Agency Name, Address)

DATE:

RE: Material Safety Data Sheets (MSDS)

We are using (number) of your products and need (a) Material Safety Data Sheet(s) in order to complete our Hazard Communication Program.

Please send (a) Material Safety Data Sheet(s) on the following products:

Your prompt attention is necessary for us to fully implement our Hazard Communication Program. Please send the MSDS(s) no later than (date 15 days after the date of this letter).

Thank you for your cooperation.

*** A tickler file should be established to notify the responsible individual in 15 days that their request for an MSDS has not been received and that a second notice is needed.**

[Type text]

Form #6

SECOND REQUEST FOR MSDS

TO: Chemical Manufacturer, Vendor, and Distributor

FROM: (Agency Name, Address)

DATE:

RE: Material Safety Data Sheets (MSDS)

On (date) we requested (an) Material Safety Data Sheet(s) on the following product(s):

We have not received (it/them). Your prompt attention to this is necessary for us to complete our Hazard Communication Program. Please respond to this second request by (date 15 days after the date of this letter).

Thank you for your cooperation.

[Type text]

Form #7 LETTER TO REQUEST A COMPLETE MSDS

TO: Chemical Manufacturer, Vendor, and Distributor

FROM: (Agency Name, Address)

DATE:

RE: Material Safety Data Sheets (MSDS)

In reviewing the Material Safety Data Sheet(s) for your product(s), the following required information (according to the OSHA Hazard Communication Standard 1910.1200) was not on the MSDS:

Product Name

Reason MSDS Is Not Complete

Please supply us with this information. Your prompt attention to this is necessary for us to fully implement our Hazard Communication Program. Please send this information by (date 15 days after the date of this letter).

Thank you for your cooperation.

*** A tickler file should be established to notify the responsible individual in 15 days that their request for a revised MSDS has not been received and that a second notice is needed.**

[Type text]

Form #8 **SECOND REQUEST FOR A COMPLETE MSDS**

TO: **Chemical Manufacturer, Vendor, and Distributor**

FROM: **(Agency Name, Address)**

DATE:

RE: **Material Safety Data Sheets (MSDS)**

On (date) we notified you that the Material Safety Data Sheet(s) for your product(s) (was/were) incomplete. The following required information was not on the MSDS(s):

Product Name

Reason MSDS Is Not Complete

We requested that you supply us with this information by (date). We have not received this information. Your prompt attention to this is necessary for us to complete our Hazard Communication Program. Please respond to this second request by (date 15 days after the date of this letter).

Thank you for your cooperation.

[Type text]

Form #9

LETTER TO ACCOMPANY PURCHASE ORDERS

This is a notice to chemical vendors concerning the need for MSDS's and container labeling. This letter should be attached to purchase orders for all chemicals or other hazardous substances.

TO: Chemical Manufacturer, Vendor, and Distributor

FROM: Organization Name and Address

DATE:

RE: Hazard Communication Responsibilities

Attached to this letter is a purchase order for the chemicals which we plan to utilize in our facility. Our receiving personnel have been instructed to accept only containers which have been properly labeled and identified. Improperly labeled containers will result in refusal of the shipment. We would appreciate your cooperation in this matter.

[Type text]

We expect to receive Material Safety Data Sheets (MSDS) prior to receipt of our initial order and/or when an MSDS has been revised. If your policy is different, or has changed since our last order, please notify us as soon as possible. To assist us, we would appreciate if you would record the responsible party information on the shipping papers.

If you have any questions, please do not hesitate to contact me. Thank you for your cooperation. I look forward to working with you in the future.

**Yours truly,
(Name of Purchasing Director/Program Director)**

NOTE: THIS LETTER SHOULD BE ATTACHED TO THE INITIAL AND/OR TO EACH PURCHASE ORDER FOR CHEMICALS OR HAZARDOUS SUBSTANCES

[Type text]

Form #10

REQUEST FOR CHEMICAL HAZARD INFORMATION

(Use a separate form for each chemical/material)

Name of Requester (S): _____ Date: _____

Social Security Number: _____

Department: _____

Name of Chemical/Material: _____

Manufacturer: _____

Description: _____

(Please describe the material as completely as possible)

_____	_____
Date	Employee or Union Representative Signature

Received copy of MSDS: Yes No

Copy provided by: _____ Date: _____

[Type text]

Form #11

EMPLOYEE'S NEW CHEMICAL/SUBSTANCE SIGNATURE FORM

Name of New Chemical/Substance: _____

Vendor's Name: _____

Location: _____

Date the Chemical Arrived: _____

Date of Posting (MSDS) Form: _____

This chemical may have health effects not covered during your initial Hazard Communication Training Session. Each affected employee is asked to read the attached Material Safety Data Sheet (MSDS) to understand the new health effects for the following chemical:

Upon reading the Material Safety Data Sheet (MSDS), each employee must sign and date this form.

1. _____ 6. _____

2. _____ 7. _____

3. _____ 8. _____

[Type text]

Form #12

EMPLOYEE HAZARD COMMUNICATION TRAINING RECORD

The following employee(s) have completed training in Hazard Communication. Each trained employee is now knowledgeable in all 11 different training topics covered in the Hazard Communication Written Training Program.

- Policies and procedures related to the Hazard Communication Standard.
- Location of the written Hazard Communication Program.
- Physical and health hazards of hazardous substances in their work area.
- How to prevent or reduce exposure to hazardous substances.
- Personal protective equipment.
- Methods/observation/techniques to determine the presence or release of hazardous chemicals.
- How to read and interpret MSDS.
- Location of MSDS.
- Work practices that result in exposure.
- Procedures to follow if exposure occurs.
- Emergency response procedures for hazardous chemical spills.

[Type text]

Employee's Name	Employee's Signature	Date of Training	Trainer	Trainer's Signature

Form #13

[Type text]

NON-ROUTINE HAZARDOUS TASK TRAINING DOCUMENTATION FORM

The following employee(s) has/have been trained to perform work in what is considered a "non-routine hazardous task."

Nonroutine Hazardous Task	Employee(s) Name	Date of Training	Trainer

[Type text]

Form #14

**DOCUMENTATION OF INFORMATION GIVEN
TO CONTRACTORS PERTAINING TO HAZARD COMMUNICATION**

Facility: _____ **Location:** _____

[illegible]

[Type text]

Form #15

LETTER TO CONTRACTORS

Subject: OSHA HAZARD COMMUNICATION STANDARD

To Whom It May Concern:

The Occupational Safety & Health Administration (OSHA) Hazard Communication Standard (29CFR 1910.1200) states that contractors/suppliers must be informed of the hazardous chemicals their employees may be exposed to while performing their work and any appropriate protective measures. In order to comply with this requirement, Merit Electric has developed a list of all the hazardous chemicals known to be present in our facility. A Material Safety Data Sheet (MSDS) is also on file for each of these chemicals and/or hazardous substances. This information is available to you and to your employees upon request.

In order to protect the safety and health of our own employees, contractors/suppliers must provide (upon request) an MSDS on any hazardous chemical(s) or material(s) which they bring into this facility. Failure to provide this information in a timely manner will result in the removal of the contractor/supplier from the premises.

Each employer is also responsible for notifying any subcontractor they employ regarding the requirements of OSHA's Hazard Communication Standard and other provisions described in this letter.

If we can be of any further assistance, please feel free to contact me at (phone number).

Sincerely,

[Type text]

Form #16

HAZARD COMMUNICATION ANNUAL PROGRAM SUMMARY

Training

	Number of Training Courses Presented:	Number of Employees Trained:
New-employee training:		
Work-area-specific training:		
New-substance training:		
Other training:		
Total courses/employees		

Hazardous Substances

	# of Different Hazardous Substances in Use:	# of MSDS on File:
Previous Total:		
New This Year:		
Revised Total:		

The following activities have been completed:

Written plan is up to date.

Hazardous substance inventory has been updated.

All training is up to date.

All MSDS are up to date.

All products are properly labeled.

All portable containers are properly labeled.

If any of the above activities are not complete, explain:

Completed By: _____ Date: _____

[Type text]

Form #17 EMPLOYEE HAZARD COMMUNICATION INTERVIEW

Date of Interview: _____

Interview conducted by: _____
!Unexpected End of Formula

Agency: _____

Location: _____

1. **Do you feel that your organization's Hazard Communication Program is successful?**
Overall? Yes ____ No ____ Why?

2. **What was the subject of the last training session you attended?**

3. **Have you applied the information from that session? Yes ____ No ____ if yes,**
How?

4. **Have you had an occasion to refer to an MSDS in the last month? Yes ____ No ____**
Which one? _____

a. **Was the MSDS easy to understand? Yes ____ No ____**

b. **Why did you refer to the MSDS?**

c. **Did the MSDS have the information you were looking for? Yes ____ No ____**

[Type text]

If no, what information was missing?

5. Have all of the containers in your work area been properly labeled and marked?

Yes ____ No ____

6. Over the last six months, has your work area been involved in any chemical spill or emergency? Yes ____ No ____ if yes, describe

7. Were you prepared? Yes ____ No ____ if not, why not?

Form # 18**HAZARD COMMUNICATION CHECKLIST**

	Yes	No
Has a program for hazard communication training been established?		
Has a program for hazard communication procedures been established And is the program reviewed on an annual basis?		
Are chemical injuries tracked for program improvement?		
Have chemical hazard control procedures developed for each job?		
Has a chemical inventory of the facility been conducted?		
Are the procedures reviewed on an annual basis?		
Do the hazard communication procedures include the following:		
• A statement of the intended use?		
• Steps for labeling of containers?		
• Steps for safe issuance, use, transfer and disposal of chemicals?		
Are control procedures inspected at least annually?		
Are periodic inspections conducted by a competent employee?		
Is the inspection designed to correct deviations or inadequacies?		
Is the inspection documented?		
Have MSDSs been produced in accordance with 29CFR 1910.1200?		
Have employees been informed of:		
• The requirements of 29 CFR 1910.1200?		
• Any operations in their work area where hazardous chemicals are present?		
• The location and availability of the written HAZCOM program?		
• The location and availability of the lists of hazardous chemicals?		
Does employee training include at least:		
• Methods & means necessary to detect the presence or release of a chemical?		
• The physical and health hazards of the chemicals in the work area?		
• The steps employees can take to protect themselves from the chemicals?		
• The details of the written program?		
Have criteria for recurrent training been developed?		
Is the training documented?		
Is the training conducted by a competent person?		
Is retraining required whenever there is a change in job assignments?		

ENERGIZED ELECTRICAL WORK

MERIT ELECTRIC COMPANY, LTD

THIS PROGRAM IS BEING IMPLEMENTED TO PROVIDE EMPLOYEES WITH A GUIDE TO WHEN, WHY, AND HOW TO WORK ON ENERGIZED PARTS AND EQUIPMENT. THIS PROGRAM IS REFERENCED HEAVILY BY THE **NFPA 70E (ARTICLE 130)**.

NFPA 70E 130.1-JUSTIFICATION FOR WORK

- A. JUSTIFICATION FOR WORK ON ENERGIZED EQUIPMENT.
 - a. ENERGIZED WORK IS ALLOWED WHEN DE-ENERGIZING THE EQUIPMENT WOULD BE MORE HAZARDOUS (I.E. INTERRUPTION OF LIFE SUPPORT EQUIPMENT, DEACTIVATION OF EMERGENCY ALARM SYSTEMS, AND SHUTDOWN OF HAZARDOUS LOCATION VENTILATION EQUIPMENT).
 - b. ENERGIZED WORK IS ALLOWED WHEN IT IS IMPOSSIBLE TO PERFORM WORK ON THE EQUIPMENT WHILE DE-ENERGIZED BECAUSE OF EQUIPMENT DESIGN OR JOBSITE (OPERATIONAL) LIMITATIONS (I.E. TESTING OF ELECTRICAL CIRCUITS, ETC.).
 - c. ENERGIZED WORK IS ALLOWED ON EQUIPMENT OPERATING AT LESS THAN 50 VOLTS TO GROUND. OVERCURRENT PROTECTION MUST STILL BE CONSIDERED AND THERE MUST NOT BE ANY INCREASED EXPOSURE TO ELECTRICAL BURNS OR EXPLOSIONS DUE TO ARCS.
- B. ENERGIZED ELECTRICAL WORK PERMIT.
 - a. REQUIRED BEFORE WORKING ON ENERGIZED EQUIPMENT THAT IS JUSTIFIED BY PART A OF THIS PAGE.
 - b. THE ENERGIZED ELECTRICAL WORK PERMIT SHALL INCLUDE AT LEAST:
 - i. A DESCRIPTION OF THE CIRCUIT AND EQUIPMENT TO BE WORKED ON AND THEIR LOCATION.
 - ii. JUSTIFICATION FOR WHY THE WORK MUST BE PERFORMED IN AN ENERGIZED CONDITION.
 - iii. A DESCRIPTION OF THE SAFE WORK PRACTICES TO BE EMPLOYED (RESTRICTED ACCESS, LIMITED MOVEMENT WITHIN A SPECIFIED AREA, ETC.)
 - iv. RESULTS OF THE SHOCK HAZARD ANALYSIS
 - v. DETERMINATION OF SHOCK PROTECTION BOUNDARIES.
 - vi. RESULTS OF THE ARC FLASH HAZARD ANALYSIS.
 - vii. THE ARC FLASH PROTECTION BOUNDARY.
 - viii. THE NECESSARY PERSONAL PROTECTIVE EQUIPMENT TO SAFELY PERFORM THE ASSIGNED TASK (FLASH BLANKET, FR SUIT).

- ix. MEANS EMPLOYED TO RESTRICT THE ACCESS OF UNQUALIFIED PERSONS FROM THE WORK AREA (PHYSICALLY GUARDING ACCESS, CAUTION TAPE, ETC.).
 - x. EVIDENCE OF COMPLETION OF A JOB BRIEFING, INCLUDING A DISCUSSION OF ANY JOB-SPECIFIC HAZARDS.
 - xi. ENERGIZED WORK APPROVAL (AUTHORIZING OR RESPONSIBLE MANAGEMENT, SAFETY DIRECTOR, OR OWNER) SIGNATURE.
- C. EXEMPTIONS TO WORK PERMIT
- a. WORK PERFORMED WITHIN THE LIMITED APPROACH BOUNDARY OF ENERGIZED ELECTRICAL CONDUCTORS OR CIRCUIT PARTS BY QUALIFIED PERSONS RELATED TO THE FOLLOWING TASKS, PROVIDED THEY USE SAFE WORK PRACTICES AND PERSONAL PROTECTIVE EQUIPMENT, SHALL NOT NEED AN ENERGIZED ELECTRICAL WORK PERMIT:
 - i. TESTING
 - ii. TROUBLESHOOTING
 - iii. VOLTAGE MEASURING

NFPA 70E 130.2-APPROACH BOUNDARIES TO ELECTRICAL EQUIPMENT

- A. A SHOCK HAZARD ANALYSIS WILL BE USED TO ESTABLISH EMPLOYEE VOLTAGE EXPOSURE, BOUNDARY REQUIREMENTS, AND THE PERSONAL PROTECTIVE EQUIPMENT REQUIRED KEEPING EMPLOYEES SAFE.
- B. USE THE FOLLOWING TABLE TO DETERMINE THE LIMITED, RESTRICTED, AND PROHIBITED APPROACH BOUNDARIES BASED ON WORK TO BE DONE AND VOLTAGE OF EQUIPMENT.
- C. NONE WILL APPROACH OR TAKE ANY CONDUCTIVE OBJECT CLOSER TO EXPOSED ENERGIZED ELECTRICAL EQUIPMENT OPERATING AT 50 VOLTS OR MORE THAN THE RESTRICTED APPROACH BOUNDARY IN TABLE 130.2C UNLESS ONE OF THE FOLLOWING:
 - a. THE QUALIFIED PERSON IS INSULATED OR GUARDED FROM THE ENERGIZED EQUIPMENT AND NO UNINSULATED PART OF THE PERSON'S BODY WILL CROSS THE PROHIBITED APPROACH BOUNDARY. NO UNINSULATED PART OF THE BODY WILL CROSS THE PROHIBITED APPROACH BOUNDARY.
 - b. THE ENERGIZED EQUIPMENT IS INSULATED FROM THE PERSON AND CONDUCTIVE OBJECT.
 - c. THE QUALIFIED PERSON IS INSULATED FROM ANY OTHER CONDUCTIVE OBJECT AS DURING LIVE-LINE BARE-HAND WORK.
- D. UNQUALIFIED PERSONNEL WILL NOT BE PERMITTED TO ENTER SPACES THAT ALLOW QUALIFIED EMPLOYEES ONLY, UNLESS THE EQUIPMENT IS DE-ENERGIZED.

NFPA 70E 130.3-ARC FLASH HAZARD ANALYSIS

- A. AN ARC FLASH HAZARD ANALYSIS WILL BE USED PRIOR TO WORK ON EXPOSED ENERGIZED EQUIPMENT TO DETERMINE THE ARC FLASH PROTECTION BOUNDARY AND PERSONAL PROTECTIVE EQUIPMENT REQUIRED.
- B. AN ARC FLASH HAZARD ANALYSIS IS NOT REQUIRED IF ALL THE FOLLOWING CONDITIONS EXIST:
 - a. THE CIRCUIT IS RATED 240 VOLTS OR LESS.
 - b. THE CIRCUIT IS SUPPLIED BY ONE TRANSFORMER.
 - c. THE TRANSFORMER SUPPLYING THE CIRCUIT IS RATED LESS THAN 125KVA.
- C. IN INSTANCES WHERE THE VOLTAGE LEVELS ARE BETWEEN 50 AND 600 VOLTS AND AN ARC FLASH HAZARD ANALYSIS HAS NOT BEEN DONE, THE ARC FLASH PROTECTION BOUNDARY SHALL BE 4 FEET.
- D. ANY WORK TO BE DONE ABOVE 600 VOLTS WILL NOT BE DONE BY MERIT ELECTRIC. IT WILL BE CONTRACTED OUT.
- E. WHERE IT HAS BEEN DETERMINED THAT WORK WILL BE PERFORMED WITHIN THE ARC FLASH BOUNDARY IDENTIFIED IN NFPA 70E 130.3A, PROPER PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT SHALL BE WORN IN ACCORDANCE TO THE FOLLOWING:
 - a. INCIDENT ENERGY ANALYSIS, REFER TO ANNEX D OF THE NFPA 70E ON DETERMINING THE AMOUNT OF INCIDENT ENERGY EXPOSURE(CAL/CM2)
 - b. HAZARD/RISK CATEGORIES, THE REQUIREMENTS OF NFPA 70E 130.7(C) (9), 130.7(C) (10), 130.7(C) (11) SHALL BE PERMITTED TO BE USED.
- F. EQUIPMENT SHALL BE LABELED WITH THE AVAILABLE INCIDENT ENERGY OR THE REQUIRED PERSONAL PROTECTIVE EQUIPMENT NEEDED.

NFPA 70E 130.6-PRECAUTIONS FOR PERSONNEL ACTIVITIES

- A. EMPLOYEES SHOULD BE ALERT AT ALL TIMES WHILE WORKING WITHIN THE LIMITED APPROACH BOUNDARY OF ENERGIZED ELECTRICAL PARTS OPERATING AT 50 VOLTS OR MORE.
- B. EMPLOYEES SHALL NOT REACH BLINDLY INTO AREAS THAT MIGHT CONTAIN EXPOSED ENERGIZED PARTS WHERE A HAZARD EXISTS.
- C. EMPLOYEES SHALL NOT ENTER ANY SPACES CONTAINING ELECTRICAL HAZARDS WHERE THE PROPER ILLUMINATION IS NOT PROVIDED TO WORK IN A SAFE MANNER.
- D. EMPLOYEES SHALL NOT WEAR CONDUCTIVE ARTICLES OF CLOTHING OR JEWELRY (SUCH AS WATCHES, BRACELETS, RINGS, NECKLACES, CLOTH WITH CONDUCTIVE THREADS, ETC.).

[Type text]

- E. CONDUCTIVE MATERIALS, TOOLS, AND EQUIPMENT THAT ARE IN CONTACT WITH THE EMPLOYEE'S BODY SHALL BE HANDLED AS TO PREVENT ACCIDENTAL CONTACT WITH THE EXPOSED ELECTRICAL PARTS.
- F. WHEN WORKING IN CONFINED OR ENCLOSED SPACES THAT CONTAIN ENERGIZED ELECTRICAL PARTS, THE EMPLOYER SHALL PROVIDE AND EMPLOYEE SHALL USE PROPER PPE TO AVOID INADVERTENT CONTACT WITH THESE PARTS. DOORS, HINGED PANELS, ETC. SHALL BE SECURED PROPERLY AS TO AVOID SWINGING INTO THE EMPLOYEE CAUSING CONTACT WITH ENERGIZED PARTS.

EMPLOYEES SHALL NOT PERFORM ANY HOUSEKEEPING DUTIES IN THE LIMITED APPROACH BOUNDARY UNLESS PROPER SAFEGUARDS HAVE BEEN PROVIDED TO AVOID CONTACT. ELECTRICALLY CONDUCTIVE CLEANING MATERIALS SHALL NOT BE USED UNLESS PROCEDURES TO PREVENT CONTACT ARE FOLLOWED.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

MERIT ELECTRIC COMPANY, LTD

A. HARD HATS

- a. EVERY EMPLOYEE ENTERING A JOB SITE MUST WEAR A HARD HAT.
- b. ALL HARDHATS MUST MEET Z89.1-1969 ANSI STANDARD.
- c. ANY EMPLOYEES EXPOSED TO HIGH VOLTAGE ELECTRICAL SHOCK MUST HAVE A HARDHAT THAT MEETS Z89.2-1971 ANSI STANDARD.
- d. EMPLOYEE CAN NOT WEAR HARD HAT BACKWARDS

B. EYE PROTECTION

- a. EVERY EMPLOYEE ENTERING A JOB SITE SHALL WEAR EYE PROTECTION WITH SIDE SHIELD. TO PROTECT THE EMPLOYEE OF POTENTIAL EYE OR FACE INJURY FROM PHYSICAL OR CHEMICAL.
- b. WHEN DRILLING OVERHEAD, GOGGLES MUST BE WORN.
- c. ALL EYE PROTECTION MUST MEET Z87.1-1968 STANDARDS.
- d. WHEN GRINDING: USE FACE SHIELD

C. HEARING PROTECTION

- a. HEARING PROTECTION MUST BE WORN ANY TIME SOUND LEVELS EXCEED 90 DECIBELS, SUCH AS:
 - i. JACK HAMMERING.
 - ii. CONCRETE DRILLING.
 - iii. POWDER ACTUATED TOOLS.
 - iv. WHEN WORKING NEAR OTHERS WEARING EAR PROTECTION DUE TO THEIR JOB TASKS.
 - v. AS A RULE OF THUMB, ANY TIME ELEVATING YOUR VOICE IS NECESSARY TO TALK TO SOMEONE RIGHT NEXT TO YOU.
 - vi. IF YOU ARE UNSURE, WEAR HEARING PROTECTION.

D. CLOTHING

- a. EMPLOYEES MUST WEAR A SHIRT THAT COVERS THE BODY FROM NECK TO WAIST AND HAS EITHER SHORT OR LONG SLEEVES. NO MUSCLE SHIRTS WILL BE WORN.
- b. EMPLOYEES MUST WEAR STURDY PANTS COVERING THE LENGTH OF THE LEG TO THE BOOT.

E. SAFETY SHOES/BOOTS POLICY

- a. TO ENSURE THE SAFETY OF OUR EMPLOYEES. APPROPRIATE SAFETY FOOTWEAR THAT MEET Z41.1-1967 TO PROTECT THE FEET AGAINST ROLLING OBJECTS AND LACERATIONS FROM SHARP OBJECTS

[Type text]

- b. SAFETY SHOES ARE REQUIRED FOR EMPLOYEES WHO'S JOB DUTIES INCLUDE BUT ARE NOT LIMITED THE LIFTING, CARRING, CLIMBING, CRAWLING, CONSTRUCTION, DEMOLITION OR MOVING ETC., OF OBJECTS THAT WEIGHT MORE THAN 15 LBS.
- c. ANKLE PROTECTION: SIX OR EIGHT-INCH SAFETY SHOE WILL BE REQUIRED STURDY SHOES/BOOTS WITH A DEFINED HEEL ARE REQUIRED.

F. FALL PROTECTION 1926.502

- a. FALL PROTECTION WILL BE WORN BY ALL PERSONNEL WHO ARE WORKING AT ELEVATIONS OF 6 FEET OR MORE OFF THE GROUND.
- b. 1926.502(d) (19) EXPIRED, SUBJECTED TO IMPACT LOADING OR TORN OR FRAYED FALL PROTECTION WILL BE TAG, TAPED AND RETURNED IMMEDIATELY TO THE SHOP FOR REPLACEMENT.
- c. 1926.503(a) (1) EMPLOYEES WHO MIGHT BE EXPOSED TO FALL HAZARDS SHALL BE TRAINED IN FALL PROTECTION
- d. INSPECT FALL PROTECTION DAILY FOR TEARS OR FRAYS BEFORE EACH USE.
- e. BODY BELTS ARE PROHIBITED.
- f. LANYARDS AND VERTICAL LIFELINES SHALL HAVE A MINIMUM BREAKING STRENGTH OF 5,000 POUNDS.
- g. HORIZONTAL LIFE LINES WHICH CAN MAINTAINS A SAFETY FACTOR OF AT LEAST TWO.
- h. ANYTHING UNDER 18.1/2 FOOT SHALL USE A SELF RETRACTING LIFELINE WITH AN AUTOMATIC LIMIT FREE FALL DISTANCE OF 2 FEET OR LESS. CAPABLE OF SUSTAINING A MINIMUM TENSILE LOAD OF 3,000 POUNDS
- i. 1925.502(g) (1) CONTROLLED ACCESS ZONE: DEFINED BY A CONTROL LINE OR BY ANY OTHER MEANS THAT RESTRICTS ACCESS TO LEADING EDGE.
- j. 1926.502(g) (1) (i) CONTROL LINES SHALL BE ERECTED NOT LESS THAN 6 FEET. AND NOT MORE THAN 25 FEET.
- k. 1926.502(g)(3)-(3)(ii) OTHER CONTROLLED ACCESS SHALL BE ERECTED 42 INCHES FROM THE GROUND AND CONTROL LINES CONSIST OF ROPES, WIRES, TAPES, OR EQUIVALENT MATERIALS.
- l. BARRICADES: TOP BARRICADE SHALL BE 42 INCHES HIGH PLUS OR MINUS 3 INCHES AND ABLE TO WITHSTAND 200 POUNDS. MIDRAILS 21 INCHES HIGH AND CAN WITHSTAND 150 POUNDS. AND TOE BOARD NEEDS TO WITHSTAND 50 POUNDS.

[Type text]

GLOVES

- m. GLOVES WILL BE WORN BY ALL PERSONNEL WHEN HANDLING ROUGH OR SHARP EDGES OR ANY WORK THAT COULD CAUSE INJURY OR ABRASIONS TO HANDS.
- n. GLOVES SHALL BE WORN BY INDIVIDUALS WHO HAVE RECENTLY INJURED THEIR HANDS.
- o. GLOVES SHALL BE WORN WHEN WORKING WITH CHEMICALS THAT ARE CORROSIVE OR MATERIALS THAT ARE HEATED.

G. REFLECTIVE VESTS

- a. REFLECTIVE VESTS WILL BE WORN WHEN DIRECTING EQUIPMENT OR TRAFFIC.
- b. WORKING NEAR ROADS OR VEHICLES.
- c. WHEN VISIBILITY IS LIMITED DUE TO NATURAL OCCURRENCES. (NIGHT, DAWN OR LATE EVENING.
- d. IN HIGH TRAFFIC AREAS OF EQUIPMENT OR TRAFFIC.
- e. ON CUSTOMER REQUEST.

H. CARE AND MAINTENANCE

- a. PPE, IF STORED ON THE PROJECT SITE OR IN A VEHICLE, MUST BE IN A CLEAN, DRY AREA.
- b. 1926.95(d) (5) MERIT ELECTRIC IS NOT RESPONSIBLE FOR REPLACING PPE THAT IS LOST OR INTENTIONALLY DESTROYED BY EMPLOYEES.

[Type text]

Certification of Training

Personal protective equipment

I certify that I received training for personal protective equipment as an employee of **MERIT ELECTRIC**. I further certify that I understand the procedures and will abide by those procedures.

AUTHORIZED EMPLOYEE SIGNATURE

DATE

LADDER SAFETY

MERIT ELECTRIC COMPANY, LTD

THESE PROVISIONS COVER THE MOST COMMONLY USED LADDERS AT MERIT ELECTRIC. FOR OTHER LADDERS NOT DEFINED IN THESE PARTS, REFER TO THE MANUFACTURER'S INSTRUCTIONS.

A. GENERAL LADDER SAFETY

- a. LADDERS MUST BE INSPECTED PROPERLY BEFORE EACH USE, INCLUDING BUT NOT LIMITED TO RUNGS OR STEPS, FOOTINGS, LOCKING RAILS, RIVETS, CRACKS, AND THAT SAFETY LABELS AND STICKERS ARE IN TACT.
- b. LADDERS MUST BE PLACED ON FLAT, LEVEL SURFACES. THEY MAY NOT BE STACKED ON TOP OF OTHER OBJECTS OR MATERIAL TO REACH HIGHER ELEVATIONS.
- c. LADDERS MUST NOT BE TIED OR FASTENED TOGETHER UNLESS DESIGNED TO DO SO.
- d. MUST BE FREE OF GREASE, OIL, AND OTHER SLIPPING HAZARDS.
- e. LADDERS MUST NOT BE MOVED OR SHIFTED WHILE BEING OCCUPIED.
- f. NEVER STAND ON THE TOP STEP OF ANY LADDER.
- g. EVERYONE MUST FACE THE LADDER WHILE ASCENDING/DESCENDING MAINTAINING 3 POINTS OF CONTACT.

B. A-FRAME LADDERS

- a. ALWAYS SELECT THE PROPER HEIGHT LADDER FOR THE JOB
- b. DO NOT OVERREACH YOUR CENTER OF GRAVITY. ALWAYS MAINTAIN 3 POINTS OF CONTACT WHEN POSSIBLE.
- c. DO NOT LEAVE TOOLS OR OTHER ITEMS ON TOP STEP.
- d. DO NOT STACK LADDERS ON TOP OF OTHER OBJECTS TO REACH A HIGHER ELEVATION. USE A TALLER LADDER.
- e. NEVER USE A METAL LADDER WHILE WORKING ON ENERGIZED PARTS. USE WOOD OR FIBERGLASS.
- f. IF LADDER IS KNOCKED OVER IT MUST BE INSPECTED AGAIN FOR DENTS AND CRACKS.
- g. WHEN USING THESE LADDERS TO ACCESS AN UPPER SURFACE, THE LADDER MUST EXTEND 3 FEET ABOVE THE SURFACE.

C. EXTENSION LADDERS

- a. PROPERLY SELECT, INSPECT BEFORE EACH USE, UTILIZE AND MAINTAIN EXTENSION LADDERS.

[Type text]

- b. SHOULD BE PLACED AT A PITCH OF 4:1 (VERTICAL: HORIZONTAL) TO OPTIMIZE THE COMBINATION OF LADDER STRENGTH, CLIMBING BALANCE AND RESISTANCE TO SLIDING.
 - c. SHOULD BE PROPERLY SECURED TO THE BUILDING/STRUCTURE AT THE TOP
 - d. THE FOOTING OF THE LADDER SHOULD BE SECURED ON FIRM, LEVEL GROUND TO IMPROVE STABILITY.
 - e. THE TOP OF THE LADDER SHOULD EXTEND A MINIMUM OF 3 FEET ABOVE THE LEVEL YOU ARE ACCESSING (3 FEET=3 LADDER RUNGS OR SPACES).
- D. FIXED LADDERS
- a. KEEP YOUR BODY PARALLEL TO LADDER WHILE CLIMBING
 - b. ALWAYS MAINTAIN 3 POINTS OF CONTACT
 - c. USE FALL PROTECTION AS REQUIRED.
 - d. BUKLE SHOULD NEVER BE PAST THE RAILS OF THE LADDER.

PROMPTLY REMOVE UNSAFE OR UNUSABLE LADDERS FROM THE JOBSITE AND REPLACE WITH A LADDER IN GOOD WORKING ORDER. **NEVER ASSUME A LADDER IS SAFE; ALWAYS INSPECT IT FIRST.**

[Type text]

Certification of Training

Ladder safety

I certify that I received training for ladder safety as an employee of **MERIT**
ELECTRIC. I further certify that I understand the procedures and will abide by
those procedures.

Authorized employee signature

date

FIRE PREVENTION/HOUSEKEEPING

MERIT ELECTRIC COMPANY, LTD

GOOD HOUSEKEEPING SHALL BE MAINTAINED AT ALL JOBSITES AND IN ALL VEHICLES. THE FOLLOWING GUIDELINES MUST BE FOLLOWED AT A MINIMUM:

- A. COMBUSTIBLE MATERIALS, SUCH AS OIL SOAKED RAGS, WASTE AND SHAVINGS SHALL BE KEPT IN METAL CONTAINERS WITH SELF-CLOSING LIDS OR IN AN AREA FAR REMOVED FROM ANY OTHER FLAMMABLE MATERIALS. ALL CONTAINERS SHOULD BE EMPTIED AS SOON AS POSSIBLE OR AT LEAST DAILY.
- B. PAPER AND OTHER COMBUSTIBLE MATERIALS SHALL NOT BE ALLOWED TO ACCUMULATE AND WEEDS AND OTHER VEGETATION SHALL NOT BE PERMITTED TO GROW NEAR OR AROUND COMPANY PROPERTY, BUILDINGS OR OTHER STRUCTURES.
- C. FLAMMABLE LIQUIDS SUCH AS GASOLINE, KEROSENE, PAINT, THINNER, ETC. SHALL NOT BE USED FOR CLEANING PURPOSES UNLESS AN ESTABLISHED SAFE METHOD TO DO SO IS IN PLACE. ALL FLAMMABLE MATERIALS SHOULD BE KEPT IN A FLAME PROOF LOCKER OR OUTSIDE OF THE MAIN STORAGE BUILDING.
- D. ALL SOLVENTS AND FLAMMABLE LIQUIDS SHALL BE KEPT IN APPROVED, PROPERLY LABELED CONTAINERS. REFER TO HAZCOM SECTION FOR LABELING PROCEDURES.
- E. WHEN POURING OR PUMPING GASOLINE OR OTHER HIGHLY FLAMMABLE OR VOLATILE LIQUIDS FROM ONE CONTAINER TO ANOTHER, CONTAINERS MUST BE GROUNDED OR "BONDED" TOGETHER TO ELIMINATE HAZARDS FROM STATIC ELECTRICITY.
- F. WHEN REFUELING ENGINES, THE ENGINE MUST BE IN THE OFF POSITION AT ALL TIMES.
- G. EMPLOYEES SHALL NOT SMOKE IN CLOSE PROXIMITY TO FLAMMABLE LIQUIDS, GASES, OR EXPLOSIVES ON ANY PROPERTY AT ANY TIME.
- H. ALL EMPLOYEES SHOULD BE FAMILIAR WITH FIRE EXTINGUISHERS IN THEIR AREA.
- I. FLAMMABLE LIQUIDS SHOULD BE STORED NO FURTHER AWAY THAN 50 FEET FROM A PORTABLE FIRE EXTINGUISHER.
- J. ALL SKID TANKS CONTAINING FLAMMABLE LIQUIDS SHALL BE PROPERLY GROUNDED.
- K. STORAGE TANKS SHALL HAVE LARGE SIGNS IDENTIFYING THEIR CONTENTS SUCH AS GASOLINE, DIESEL, ETC.
- L. GASOLINE DISPENSING TANKS SHALL NOT BE EQUIPPED WITH AUTOMATIC NOZZLES. THE NOZZLES SHOULD BE HAND-HELD WHILE FILLING TO AVOID SPARK BY STATIC ELECTRICITY.
- M. GASOLINE DISPENSING TANKS SHOULD HAVE THE FOLLOWING SIGNS:
 - a. NO SMOKING OR OPEN FLAMES
 - b. TURN OFF ENGINE WHILE RE-FUELING
 - c. GASOLINE
- N. A FIRE EXTINGUISHER SHALL BE READILY AVAILABLE AT ALL FUEL STORAGE TANKS.

[Type text]

Certification of Training
Fire prevention/housekeeping

I certify that I received training for fire prevention/housekeeping as an employee of **MERIT ELECTRIC**. I further certify that I understand the procedures and will abide by those procedures.

Authorized employee signature

date

EXCAVATING AND TRENCHING

MERIT ELECTRIC COMPANY, LTD

PRIOR TO EXCAVATING, EVERY MEANS NECESSARY MUST BE TAKEN TO DETERMINE THE LOCATION OF EXISTING UTILITY LINES. SYSTEMS MUST BE ESTABLISHED, AND THE EXACT LOCATION OF WHERE THE TRENCHING WILL OCCUR MUST BE DETERMINED. WHILE THE EXCAVATION IS OPEN, EVERY MEANS TO PROTECT EMPLOYEES MUST BE IMPLEMENTED. THE SITE SAFETY PLAN SHOULD COVER DETAILED REQUIREMENTS. THE FOLLOWING ARE MINIMUM REQUIREMENTS FOR MERIT ELECTRIC EMPLOYEES.

- A. PERSONNEL IN EXCAVATIONS MUST BE PROTECTED FROM CAVE-INS BY AN ADEQUATE PROTECTIVE SYSTEM DEVELOPED BY A COMPETENT PERSON EXCEPT WHEN:
 - a. EXCAVATIONS ARE MADE ENTIRELY IN STABLE ROCK.
 - b. EXCAVATIONS ARE LESS THAN 5 FEET DEEP AND EXAMINATION OF THE GROUND INDICATES THAT THERE IS NO POTENTIAL FOR A CAVE-IN.
- B. PROTECTIVE SYSTEM TO BE USED SHALL BE DETERMINED PRIOR TO EXCAVATION BEGINS.
- C. ALL PROTECTIVE SYSTEMS MUST BE ABLE TO WITHSTAND ALL LOADS THAT ARE INTENDED OR COULD BE EXPECTED DUE TO A CAVE-IN OR OTHERWISE.
- D. FOR SHORING REQUIREMENTS, REFER TO APPENDIX C OF 29 CFR 1926 SUBPART P AVAILABLE UPON REQUEST FROM SAFETY DIRECTOR.

IF SLOPING IS THE DESIRED PROTECTIVE SYSTEM, A SOIL CLASSIFICATION SHOULD BE MADE BEFORE DIGGING BEGINS. IF NO SOIL CLASSIFICATION IS DETERMINED, THE SLOPE MUST BE 34 DEGREES (REQUIREMENT FOR THE MOST UNSTABLE TYPE OF SOIL), OR 1 ½ FEET HORIZONTAL TO 1 FOOT VERTICAL. FOR THIS AND ALL OTHER SLOPING PROCEDURES FOLLOW THE FOLLOWING TABLES:

TABLE B-1
MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP(3)
STABLE ROCK	VERTICAL (90°)
TYPE A (2)	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 ½:1 (34°)

Footnote (1) Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

Footnote(2) A short-term maximum allowable slope of 1/2H:1V (63°) is allowed in excavations in Type A soil that are 12 feet (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53°).

[Type text]

Footnote (3) Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

Figure B-1

Slope Configurations

(All slopes stated below are in the horizontal to vertical ratio)

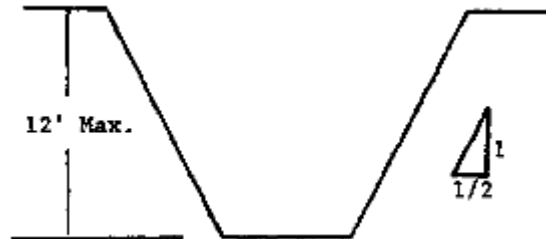
B-1.1 Excavations made in Type a soil.

1. All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of $\frac{3}{4}:1$.



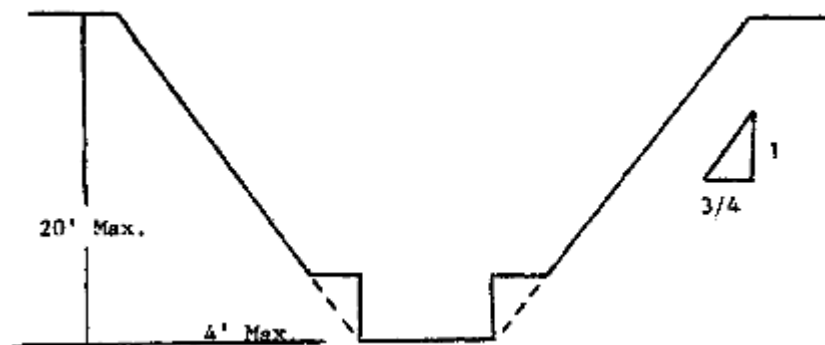
SIMPLE SLOPE -- GENERAL

Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of $\frac{1}{2}:1$.



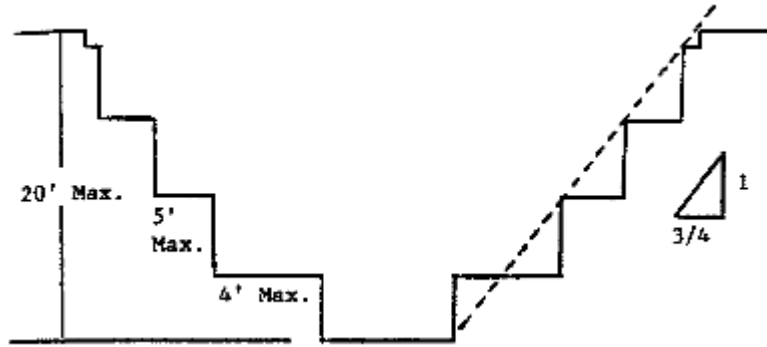
SIMPLE SLOPE -- SHORT TERM

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of $\frac{3}{4}$ to 1 and maximum bench dimensions as follows:



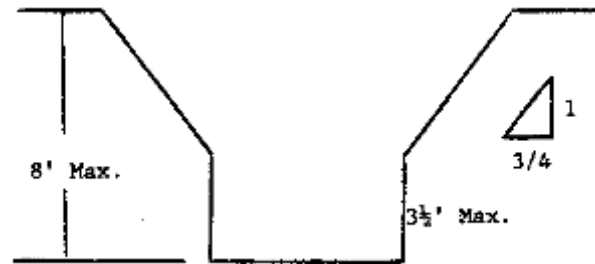
SIMPLE BENCH

[Type text]



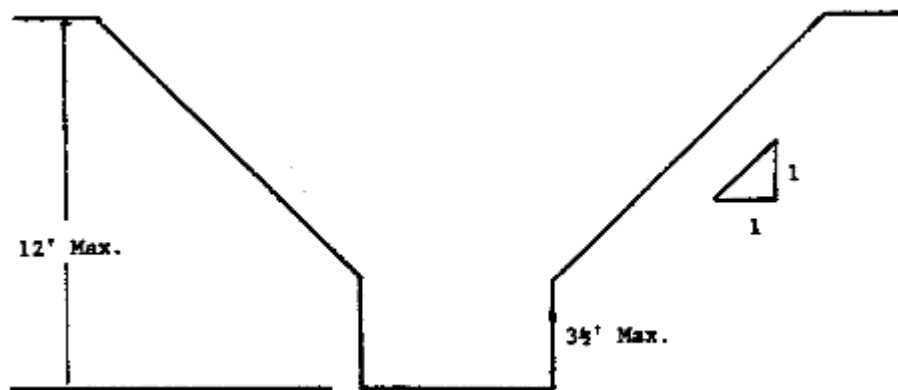
MULTIPLE BENCHES

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3½ feet.



UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 8 FEET IN DEPTH)

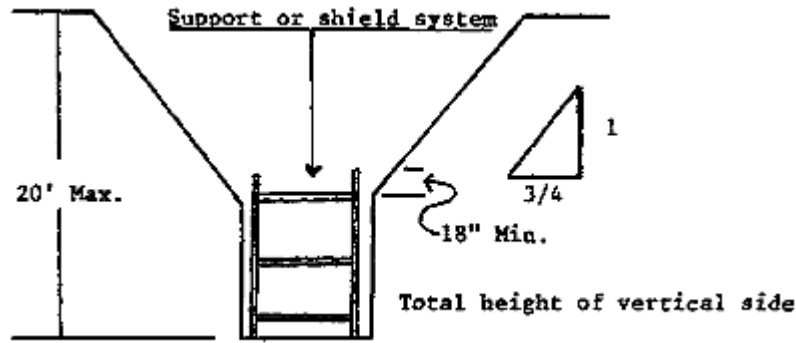
All excavations more than 8 feet but not more than 12 feet in depth with unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3½ feet.



UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 12 FEET IN DEPTH)

All excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maximum allowable slope of ¾:1. The support or shield system must extend at least 18 inches above the top of the vertical side.

[Type text]

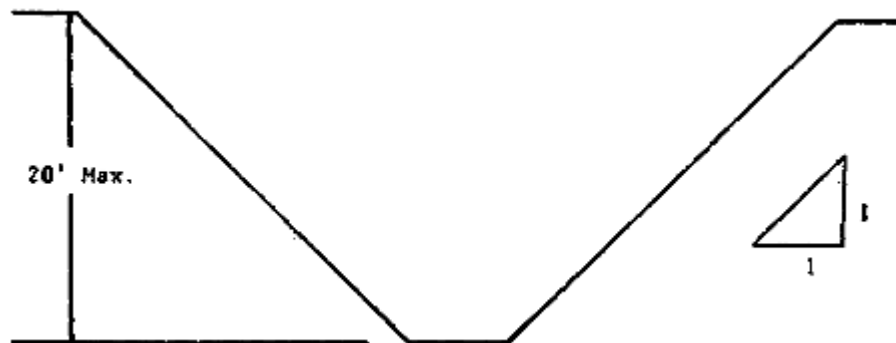


SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION

4. All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other options permitted under § 1926.652(b).

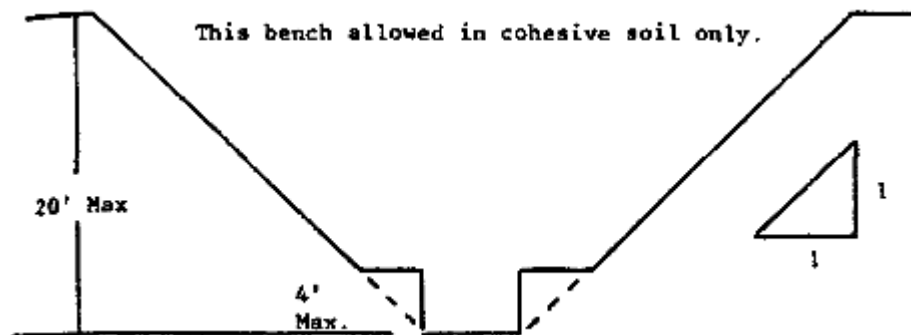
B-1.2 Excavations Made in Type B Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.



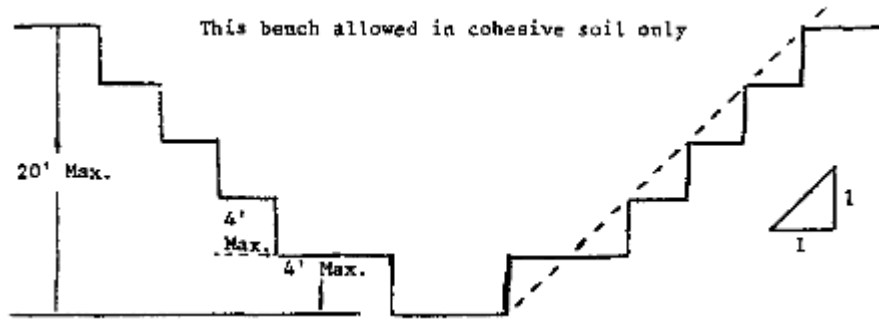
SIMPLE SLOPE

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:



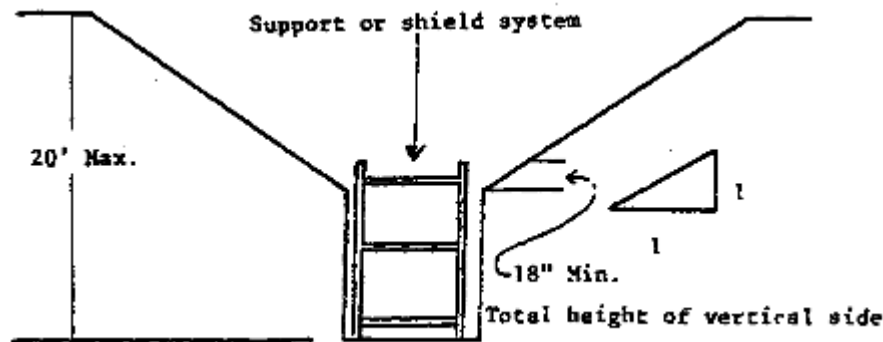
SINGLE BENCH

[Type text]



MULTIPLE BENCH

3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

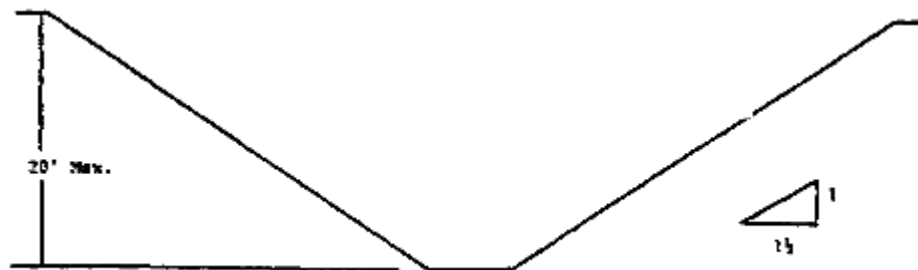


VERTICALLY SIDED LOWER PORTION

4. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

B-1.3 Excavations Made in Type C Soil

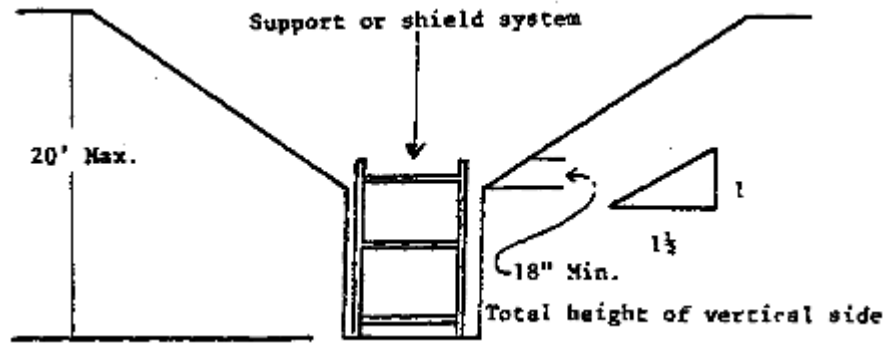
1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.



SIMPLE SLOPE

2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

[Type text]

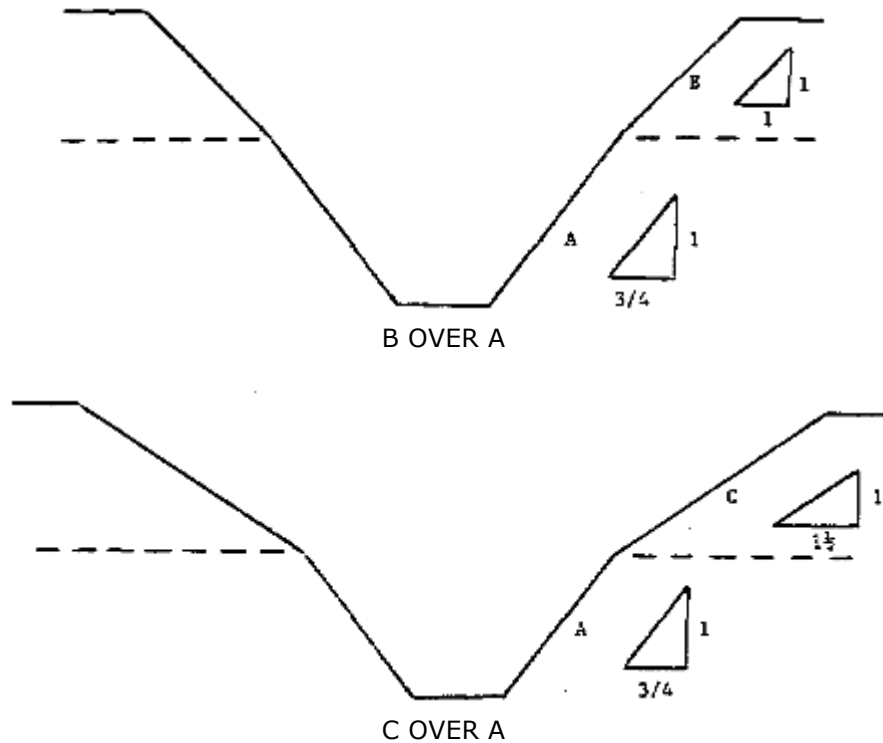


VERTICAL SIDED LOWER PORTION

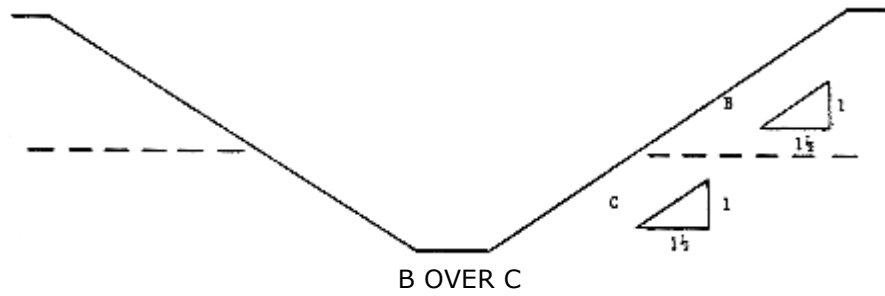
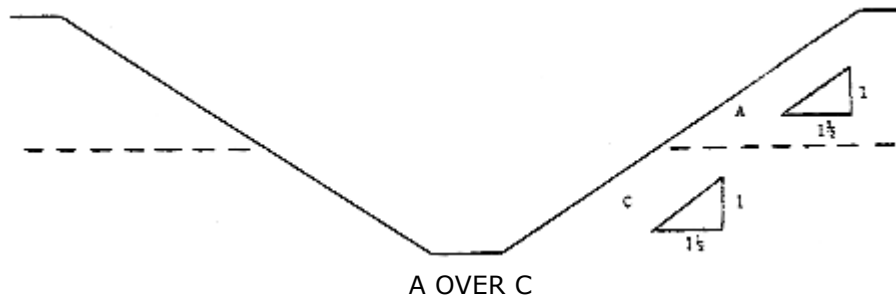
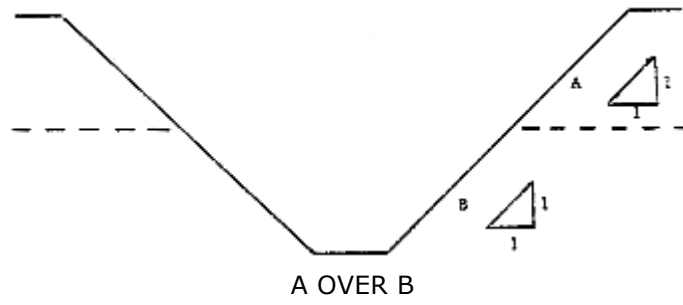
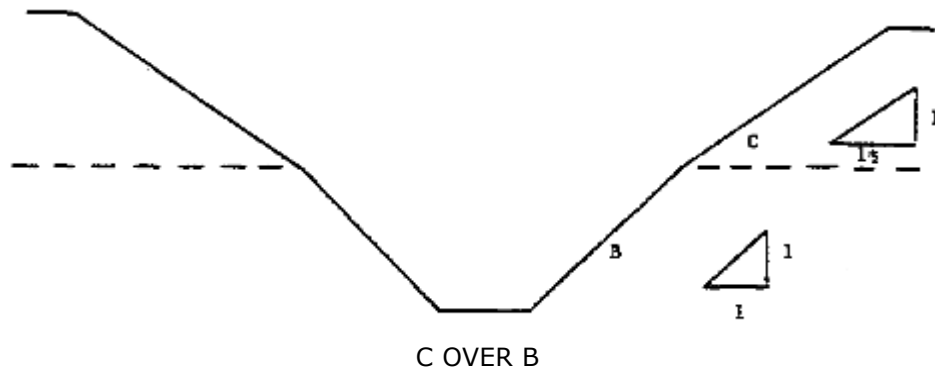
3. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

B-1.4 Excavations Made in Layered Soils

1. All excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth below.



[Type text]



[Type text]

Certification of Training

Excavating/trenching

I certify that I received training for excavating/trenching as an employee of ***MERIT ELECTRIC***. I further certify that I understand the procedures and will abide by those procedures.

Authorized employee signature

date

SCAFFOLDING

MERIT ELECTRIC COMPANY, LTD

THE FOLLOWING REQUIREMENTS ARE TO BE USED BY EMPLOYEES OF MERIT ELECTRIC TO COMPLY WITH OSHA STANDARDS AS IT RELATES TO SCAFFOLDING. CLIENTS MAY HAVE MORE SITE SPECIFIC REQUIREMENTS, BUT IN THE EVENT THAT THERE ARE NONE, THE FOLLOWING ARE BASIC GUIDELINES. FOR MORE INFORMATION, REFER TO 29 CFR 1926.451-453.

- A. ALL SCAFFOLDING MUST BE ABLE TO SUPPORT ITS OWN WEIGHT PLUS 4 TIMES THE MAXIMUM INTENDED LOAD FOR THE SCAFFOLDING.
- B. SCAFFOLDING WALKWAYS AND PLATFORMS
 - a. EACH WORKING PLATFORM MUST BE FULLY DECKED OR PLANKED AND SPACING BETWEEN DECKS AND UPRIGHT SUPPORTS WILL BE 1 INCH OR LESS.
 - b. SCAFFOLDING WALKWAYS AND PLATFORMS MUST BE AT LEAST 18 INCHES WIDE.
 - c. THE DISTANCE BETWEEN THE FRONT EDGE OF THE PLATFORM AND THE FACE OF THE WORK MUST NOT BE MORE THAN 14 INCHES.
 - d. THE END OF EACH PLATFORM, UNLESS LOCKED INTO PLACE SECURELY, MUST EXTEND PAST ITS SUPPORT AT LEAST 6 INCHES.
 - e. EACH PLATFORM 10 FEET OR LESS IN LENGTH SHALL NOT EXTEND PAST ITS SUPPORT MORE THAN 12 INCHES UNLESS GUARDRAILS ARE IN PLACE TO KEEP EMPLOYEES FROM USING THE OVERHANG.
 - f. EACH PLATFORM LONGER THAN 10 FEET SHALL NOT EXTEND PAST ITS SUPPORT MORE THAN 18 INCHES UNLESS GUARDRAILS ARE IN PLACE TO KEEP EMPLOYEES FROM USING THE OVERHANG.
 - g. DO NOT INTERCHANGE SCAFFOLDING MANUFACTURER PIECES TOGETHER UNLESS THEY FIT TOGETHER WITHOUT FORCE, AS THIS WILL DISRUPT THE STRUCTURAL INTEGRITY OF THE SCAFFOLDING.
 - h. UNSTABLE OBJECTS MAY NOT BE USED AS PLATFORMS FOR SCAFFOLDING.
- C. CONSTRUCTING SCAFFOLDING
 - a. SHOULD NOT BE ERECTED AT A HEIGHT TO WIDTH RATIO OF MORE THAN 4:1.
 - b. IF THE HEIGHT TO WIDTH RATIO EXCEEDS 4:1, THE SCAFFOLDING MUST BE BRACED OR TIED AT THE MANUFACTURER'S RECOMMENDATIONS.
 - c. SCAFFOLD POLES, LEGS, POSTS, FRAMES AND UPRIGHTS MUST REST ON BASE PLATES AND MUD SILL OR OTHER ADEQUATE FIRM FOUNDATION IF NOT ON CONCRETE.
 - d. FOOTING OF SCAFFOLDING MUST BE PLUMB AND LEVEL TO AVOID SWAYING.
 - e. SCAFFOLDING ACCESS LADDERS MUST BE 24 INCHES OR LESS FROM THE GROUND THE SCAFFOLDING IS SUPPORTED ON TO THE BOTTOM STEP OR RUNG.
 - f. ACCESS LADDERS MUST HAVE A REST PLATFORM EVERY 24 FEET.

[Type text]

- g. CROSS-BRACING MAY NOT BE USED AS A LADDER.
- h. A GUARDRAIL MUST BE INSTALLED ON AT LEAST ONE SIDE OF THE WALKWAYS WHEN WORKING HEIGHT IS 6 FEET OR MORE.
- i. TRASH AND MATERIALS MAY NOT ACCUMULATE ON THE PLATFORMS.
- j. UNLESS DE-ENERGIZED, SCAFFOLDING MUST BE CONSTRUCTED AT LEAST 10 FEET AWAY FROM INSULATED POWER LINES OF RATED LESS THAN 50 KV. FOR INSULATED POWER LINES RATED MORE THAN 50 KV, ADD .4 INCHES FOR EVERY 1 KV.

[Type text]

Certification of Training Scaffolding

I certify that I received training for scaffolding safety as an employee of **MERIT**
ELECTRIC. I further certify that I understand the procedures and will abide by
those procedures.

Authorized employee signature

date

FALL PROTECTION

MERIT ELECTRIC COMPANY, LTD

The following requirements are to be used by employees of merit electric to comply with OSHA standards as it relates to fall protection. Clients may have more site-specific requirements, but in the event that there are none, the following are basic guidelines. For more information, refer to 29 cfr 1926.501-502.

- A. fall protection consists of either a guardrail system, safety net system, or personal fall arrest system (pfa: body harness and lanyard or similar means)
- B. when to use fall protection
 - a. Anyone on a walking/working surface with an unprotected side or edge, which is 6 feet or more above lower levels.
 - b. Anyone near holes more than 6 feet above lower levels that are not covered.
 - c. Anyone near the edge of an excavation that is 6 feet or more deep.
 - d. Anyone reaching more than 10 inches below the level they are working on.
 - e. Anyone elevated in the air 6 feet or more on a hoist or other mechanical devices.
- C. guardrails
 - a. top rail must be at 42 inches plus or minus 3 inches
 - b. midrail must be at least 21 inches high
 - c. Must be able to withstand 200 pounds of pressure applied within 2 inches of top edge.
- D. safety nets
 - a. Must be constructed by a competent person trained in the construction of safety nets.
- E. personal fall arrest systems
 - a. Must be inspected before each use for frays and cuts.
 - b. Lanyards must not be used past expiration date (if no expiration date can be found, do not use).
 - c. After a lanyard has been activated, it must be removed from service.
 - d. May not be attached to a guardrail.

- e. Lanyards or lifelines shall have a minimum breaking strength of 5000 lbs.
 - f. Self-retracting lifelines and lanyards that limit free fall to 2 to 3 feet or less shall be rated at a minimum of 3000 lbs.
 - g. Those, which do not limit free fall to 2 to 3 feet or less, must be rated at a minimum of 5000 lbs. such as ripstitch or deforming lanyard.
 - h. Anchorages used for attachment of personal fall arrest systems must be rated at a minimum of 5000 lbs. per employee attached.
- F. positioning device systems
- a. Shall be rigged so that no employee can free fall more than 2 feet.
 - b. Shall be secured to an anchorage capable of supporting at least twice the impact load of an employee's fall or 3000 lbs. whichever is greater.
- G. training
- Merit electric will provide training for each employee who might be exposed to fall hazards. Training will enable the employee to recognize the hazards of falling and know the procedures to be followed in order to prevent these hazards.

[Type text]

Certification of Training
Fall protection

I certify that I received training for fall protection as an employee of **MERIT**
ELECTRIC. I further certify that I understand the procedures and will abide by
those procedures.

Authorized employee signature

date

CONFINED SPACES

MERIT ELECTRIC COMPANY, LTD

“Confined or enclosed space” refers to any space having limited means of egress, which is subject to the accumulation of flammable or toxic contaminants or has an oxygen-deficient atmosphere.

A. confined or enclosed spaces include, but are not limited to the following:

- a. storage tanks
- b. process vessels
- c. bins
- d. boilers
- e. ventilation or exhaust ducts
- f. sewers
- g. underground utility vaults
- h. tunnels or pipelines

[Type text]

- i. open top spaces more than 4 feet in depth such as pits, tubs, vaults, and vessels
- b. all employees required to enter a confined or enclosed space shall be instructed of the hazards involved, the precautions that need to be taken, and the use of the proper personal protective equipment.
- c. For more guidance as to minimum safety requirements to be followed while entering, exiting and working in confined spaces refer to American national standard ansi z117.1-1989, *safety requirements for confined spaces*.

POWDER ACTUATED TOOLS

MERIT ELECTRIC COMPANY, LTD.

Powder-actuated tools operate like a loaded gun and should be treated with the same respect and precautions. Therefore, they must be operated only by specially trained employees.

a. Safety precautions to remember include the following:

- a. These tools should not be used in an explosive or flammable atmosphere.
- b. Before using the tool, the worker should inspect it to determine that it is Clean, that all moving parts operate freely, and that the barrel is free from Obstructions.
- c. The tool should never be pointed at anybody.
- d. The tool should not be loaded unless it is to be used immediately. A loaded Tool should not be left unattended, especially where it would be available To unauthorized persons.
- e. Hands should be kept clear of the barrel end. To prevent the tool from firing Accidentally, two separate motions are required for firing:
 - 1. Bring the tool into position.
 - 2. Pull the trigger.
- f. The tool must not be able to operate until the they are pressed against the Work surface with a force of at least 5 pounds greater than the total Weight of the tool.
- g. If a powder-actuated tool misfires, the employee should wait at least 30 seconds before firing again. if it still will not fire, the user should wait another 30 seconds so the faulty cartridge is less likely to explode, then carefully remove the load. the bad cartridge should be put in water.
- h. suitable eye and face protection are essential when using a powder-actuated tool.
- i. the muzzle end of the tool must have a protective shield or guard centered perpendicularly on the barrel to confine any flying fragments or particles

that might otherwise create a hazard when the tool is fired. the tool must be designed so that it will not fire unless equipped with this safety device.

- j. all tools must be designed for varying powder charges so that the user can select a powder level necessary to do the work without excessive force.
- k. if the tool develops a defect during use it should be tagged and taken out of service immediately until it is properly repaired.
- l. before firing, the person operating the tool must announce in a loud manner that they are ready to fire. usually the most common phrase used in this situation is, "fire in the hole".

b. fasteners

when using powder-actuated tools to apply fasteners, certain precautions must be considered.

- a. fasteners must not be fired into materials that would allow it to pass to the other side.
- b. fasteners must not be driven into brick or concrete any closer than 3 inches to an edge or corner.
- c. in steel, fasteners must not come any closer than one-half inch from the corner or edge.
- d. fasteners must not be driven into brittle materials which might chip or splatter, or make the fastener ricochet.

HAND AND POWER TOOLS

MERIT ELECTRIC COMPANY, LTD

Tools are such a common part of our lives that it is difficult to remember that they may pose hazards. All tools are manufactured with safety in mind but, tragically, a serious accident often occurs before steps are taken to search out and avoid or eliminate tool-related hazards.

In the process of removing or avoiding the hazards, workers must learn to recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent those hazards.

The employer is responsible for the safe condition of tools and equipment used by employees but the employees have the responsibility for properly using and maintaining tools.

Employers should caution employees that saw blades, knives, or other tools be directed away from aisle areas and other employees working in close proximity. Knives and scissors must be sharp. Dull tools can be more hazardous than sharp ones.

Appropriate personal protective equipment, e.g., safety goggles, gloves, etc., should be worn due to hazards that may be encountered while using portable power tools and hand tools.

Safety requires that floors be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools.

POWER TOOL PRECAUTIONS

Power tools can be hazardous when improperly used. Employees should be trained in the use of all tools - not just power tools. They should understand the potential hazards as well as the safety precautions to prevent those hazards from occurring.

The following general precautions should be observed by power tool users:

1. Never carry a tool by the cord or hose.
2. Never yank the cord or the hose to disconnect it from the receptacle.
3. Keep cords and hoses away from heat, oil, and sharp edges.
4. Disconnect tools when not in use, before servicing, and when changing accessories such as blades, bits and cutters.
5. All observers should be kept at a safe distance away from the work area.
6. Secure work with clamps or a vise, freeing both hands to operate the tool.
7. Avoid accidental starting. The worker should not hold a finger on the switch button while carrying a plugged-in tool.
8. Tools should be maintained with care. They should be kept sharp and clean for the best performance. Follow instructions in the user's manual for lubricating and changing accessories.
9. Be sure to keep good footing and maintain good balance.
10. The proper apparel should be worn. Loose clothing, ties, or jewelry can become caught in moving parts.
11. All portable electric tools that are damaged shall be removed from use and tagged "Do Not Use."

ELECTRIC TOOLS

Employees using electric tools must be aware of several dangers; the most serious is the possibility of electrocution.

Among the chief hazards of electric-powered tools are burns and slight shocks which can lead to injuries or even heart failure. Under certain conditions, even a small amount of current can result in fibrillation of the heart and eventual death. A shock also can cause the user to fall off a ladder or other elevated work surface.

To protect the user from shock, tools must either have a three-wire cord with ground, be double insulated, or be powered by a low-voltage isolation transformer. Three-wire cords contain two current-carrying conductors and a grounding conductor. One end of the grounding conductor connects to the tool's metal housing. The other end is grounded through a prong on the plug. Anytime an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground. The third prong should never be removed from the plug.

Double insulation is more convenient. The user and the tools are protected in two ways: by normal insulation on the wires inside, and by a housing that cannot conduct electricity to the operator in the event of a malfunction.

These general practices should be followed when using electric tools:

1. Electric tools should be operated within their design limitations.
2. Gloves and safety footwear are recommended during use of electric tools.
3. When not in use, tools should be stored in a dry place.
4. Electric tools should not be used in damp or wet locations.
5. Work areas should be well lighted.

[Type text]

GENERAL SAFETY PRECAUTIONS

Employees who use hand and power tools and who are exposed to the hazards of falling, flying, abrasive and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases must be provided with the particular personal equipment necessary to protect them from the hazard.

All hazards involved in the use of power tools can be prevented by following five basic safety rules:

1. Keep all tools in good condition with regular maintenance.
2. Use the right tool for the job.
3. Examine each tool for damage before use.
4. Operate according to the manufacturer's instructions.
5. Provide and use the proper protective equipment.

Employees and employers have a responsibility to work together to establish safe working procedures. If a hazardous situation is encountered, it should be brought to the attention of the supervisor or foreman immediately.

Powered Industrial Trucks (Forklifts)

MERIT ELECTRIC COMPANY, LTD

What is a Powered Industrial Truck?

A Powered Industrial Truck (PIT) is a mobile, power-driven vehicle used to carry, push, pull, lift or stack material. Designated types of PITs can be operated safely in varying environments (e.g. flammable areas, dusty environments, etc.).

Operator Training

PITs are a very important part of material handling in many industries. They are also a source of serious accidents. All personnel who operate PITs must be trained and certified in their safe operation every three years. The training includes both classroom and vehicle operation. The training covers:

1. Features of the specific PIT to be operated
2. Operating procedures of the specific PIT to be operated
3. Safety concerns of specific PIT to be operated
4. Workplace conditions and safety concerns of areas where PITs will be operated.
5. Learn and practice actual operation of specific PITs to be operated.
6. Demonstrate proficiency performing the PIT operator duties specific to the workplace.

Powered Industrial Truck Stability

The PIT is based on the concept of two weights being balanced on opposite sides of a pivot point. The forward wheels are the pivot point. This is the same concept as a teeter-totter. The load on the forks must be balanced by the weight of the PIT. The center of gravity is the single point where an object is balanced in all directions. Every object has a center of gravity. When a PIT picks up a load, the truck and load have a new combined center of gravity. The stability of the PIT is determined by the location of its center of gravity, or if the PIT is loaded, the combined center of gravity.

Operating a Powered Industrial Truck

Operating a PIT takes skill and knowledge. The PIT operator and those around the

operator must treat the PIT with respect. Using proper operating procedures will minimize the potential for accidents and injuries.

Forklifts must be removed from service when they are not in safe operating condition. PITs are required to be inspected before use and should include, but not be limited to; brakes, steering, forks, mast chain components, data plate, tires, counterweight, overhead guard, control levers, horn, lights, etc. Using an inspection checklist makes this task easier and thorough.

A PIT is not a car. PITs are tall and narrow and tip over easily, so operators must drive cautiously. Stopping a PIT is also not the same as stopping a car. The two small wheels are the braking wheels, so PITs do not stop quickly.

Powered Industrial Truck Safety

Most PIT injuries are caused by tip over accidents. The primary causes of tip overs are excessive speed while turning and raised, unbalanced loads. The best way to avoid tip overs is to properly counterbalance your load. All loads must be placed as close to the back of the forks as possible.

General Safety Rules

1. Keep the load low
2. Never carry riders
3. Plan your route
4. Follow safe speed limits
5. Park safely
6. Watch for pedestrians
7. Avoid sharp turns
8. Watch for chuckholes
9. Leave aisle room
10. Maintain safe visibility
11. Watch the slope
12. Use your horn when approaching

WHEN OPERATING A SCISSOR LIFT OR BOOM

SCISSOR LIFT SAFETY & OPERATING PROCEDURES

All lift vehicles are required to rope off the area in which they are working. Using YELLOW caution ribbon, RED danger tape or barricade anytime there is danger of traffic pedestrians or vehicles.

Yellow caution ribbon- is used to make people aware that there is potential for injury and to take caution.

A person may enter the caution zone with your permission.

Red DANGER tape is used to ensure no one is to enter the hazardous area where there is greater potential for injury. No one should enter a Danger area once it is roped off.

Operators will display a professional attitude and will demonstrate the following skills:

1. Respect for personal safety.
2. Regard for safety of others.
3. Obey procedures at all times.
4. Demonstrate excellent work habits, efficiency and reliability.
5. Demonstrate respect for facilities and property.
6. It is wise to consider safety as top priority in any job we do.
7. Practice proper safety and operating awareness.
8. When required by customer person(s) on plat form must wear fall safety . protection (do not tie down to rails)
9. If operating a boom lift employee shall wear fall protection at all times with a 3 . foot lanyard or a retractable lanyard

A. SCISSOR LIFT INSPECTION

1. Before beginning operation, ensure that the Scissor Lift has received its daily TPM. If it has not been performed, do so before beginning operation.

3. Inspect the condition of all safety devices including:

- ☐ Emergency Stop Buttons.
- ☐ Emergency Lowering Devices (if so equipped).

B. SAFETY

1. Any person operating the controls of the Scissor lift or occupying the platform

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must be familiar with these Safety and Operating Procedures.

2. Electrocution Hazard: This machine is not insulated. Maintain safe clearances from electrical power lines and apparatus. You must allow for platform sway, rock or sag. This work platform does not provide protection

from contact with a proximity to an electrically charged conductor.

minimum clearance:

Voltage Range	Minimum Safe Approach Distance
Phase to Phase	Feet / Meters
0 to 300 V	Avoid Contact
Over 300 V to 50 KV	10 f / 3.05 m
Over 50 KV to 200 KV	15 f / 4.60 m
Over 200 KV to 350 KV	20 f / 6.40 m
Over 350 KV to 500 KV	25 f / 7.62 m
Over 500 KV to 750 KV	35 f / 10.67 m
Over 750 KV to 1000 KV	45 f / 13.72 m